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ORIGINAL ARTICLES.

ETIOLOGY AND PATHOLOGY OF SYMPATHETIC OPHTHALMIA.*

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In recent years the pathology of sympathetic ophthalmia has been the subject of numerous careful investigations by prominent ophthalmologists which, however, resulted in quite contradictory opinions. Deutchmann gave the experimental proof of what Mackenzie (A Practical Treatise on the Diseases of the Eye, 4th ed. p. 597) tought fifty years ago, that "the chief medium through which sympathetic opthalmitis is excited, is the union of the optic nerves," with the conclusion that the microörganisms from the infected eye apparently enter the optic track in four different ways: 1st, from the perichoroidal space; 2nd, directly from the choroid into the pial sheath of the optic nerve; 3rd, from the sheathes of the central vessels along their branches which radiate into the optic nerve, into the pial sheaths and the intervaginal space; 4th, sometimes probably from Tenon's capsule. (Deutschmann: On Ophthalmia migratoria.) Others, who did not succeed in obtaining the same results, consider it still an open question; and yet others, with Schmidt-Rimpler (*v. Græfe's Arch.* 38.1.) as representative, adhere to a modification of the old theory advanced by Heinrich Mueller, that the ciliary nerves convey the disease from the first to the second eye. Deutschmann with Leber (*von Græfe's Arch.* 27) also acknowledges this, but only for the *sympathetic irritation* which is a reflex neurosis and an entirely different disease, independent of *sympathetic* or, as he calls it, *migratory ophthalmia.* The former is permanently cured by removal of the diseased eye, whereas sympathetic ophthalmia is not influenced by it at all. Both diseases, however, may coexist in the same eye but perfectly independent of each other, or one may precede the other. The sympathetic irritation is not a milder form of sympathetic inflammation, as has been supposed, although eyes which cause sympathetic ophthalmia may also produce sympathetic irritation.

As pointed out by Schweigger, there is no typical form of sympathetic ophthalmia; it is only a diagnosis of probability. This may reach almost certainty, if a normal eye becomes diseased after an affection of the first eye, under conditions which, according to experience, deserve some value: the form of disease of the first eye; that of the second eye; and the interval between both, generally of from two weeks to four months. Schirmer (*von Græfe's Arch.*, 38. 4), gave a critical review on sympathetic ophthalmia of the publications of the last years and came to

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the conclusion which Albrecht von Græfe, 1866, pointed out, that an inflammation of the uveal tract is necessary to produce a sympathetic affection. And it is only by the development of *irid-ocyclitis* that sympathetic ophthalmia may be aroused by intraocular tumors, formation of bone in the choroid, incarceration and laceration of the ciliary body or iris, and that this inflammation is due to infection. In subconjunctival ruptures of the globe the irido-cyclitis is to be attributed to an invasion of microbes by minimal lesions of the conjunctiva, or if it sets in later by small defects of the scar, perhaps only abrasions of the epithelium (Wagenmann, *von Græfe's Arch.*, 34. 4). That infection must occur was clearly demonstrated in a case of intraocular cysticercus of Pincus (*von Græfe's Arch.*, 40. 4), which in fourteen years had brought about extensive degeneration of the globe with dislocation of the lens, without disturbing the second eye. After extraction of the lens the wound did not heal well and became infected, producing severe iridocyclitis and, after eight weeks, serious plastic uveitis of the other eye.

Aseptic perforating wounds, as for instance in operations, heal without reaction, whereas minimal quantities of microbes, brought in contact with them, cause severe inflammations, and this inflammation of the uveal tract represents the relation between injury and sympathetic ophthalmia.

The rare occurrence of sympathetic ophthalmia in *panophthalmitis*, the severest form of infectious inflammation, seems to be in apparent contradiction to these observations, especially since Schmidt-Rimpler proved by cultures the presence of staphylococcus pyogenes aureus in an eye affected with panophthalmitis for four weeks, and Schirmer in a case of metastatic panophthalmitis of three weeks duration. This has been utilized as an important argument against Deutschmann's theory. There are, however, some cases of sympathetic ophthalmia after panophthalmitis observed lately by Schirmer, Scheffels and Deutschmann. The latter (*Beitrage z. Aug.* 10 p. 50) assumes with Leber, that in panophthalmitis the microorganisms are removed with the flow of pus out of the perforated globe, or are destroyed by the profuse suppuration, and with Gifford, that the lymph-channels become obstructed by the accumulation of puss and fibrinous products, thus impeding the migration of micro-organisms. In those cases in which panophthalmitis creates sympathetic ophthalmia, Schirmer surmises a mixed infection with the hypothetical coccus of Sattler, which ordinarily is destroyed by the more virulent staphylococcus. Deutschmann suggests instead of the coccus any bacterium which is more apt to follow the tract of the optic nerve, than the staphylococcus pyogenes is in man.

Such a mixed infection is also to be supposed in sympathetic ophthalmia after *gonorrhœic* and *tuberculous* iritis, as in all the cases so far published a corneal perforation occurred which allowed the invasion of other microbes.

The sympathetic inflammation of the second eye appears in two forms: Sympathetic uveitis in its various fashions and localizations, and papillo-retinitis. Both may be combined; often the latter may not be visible on account of opacities of the media, especially when associated with choroiditis. Schirmer mentions only five cases in which papillo-retinitis preceded the uveitis, and thinks that papillo-retinitis alone is very rare and gives a much better prognosis than uveitis. Its dependence on the sympathizing eye was shown by the fact, that after enucleation it healed rapidly, though not at once as in sympathetic irritation. From this Schirmer infers that it is produced by toxines, and if caused by micro-organisms the inflammation will spread to the uveal tract.

Deutschmann found that *neuritis and neuroretinitis* of the second eye are more frequent than formerly supposed. The examination of human eyes which have been removed after they had given rise to sympathetic ophthalmia, revealed that neuritis and perineuritis were the rule. The discs of Deutschmann's rabbits were reddened and under the inner medullary stripe four to five yellow prominent choroidal spots of the size of a pin's head owing to circumscribed round-cellinfiltrations of the choroid.

As a typical *ophthalmoscopic* picture of sympathetic ophthalmia, Hirchberg (*C. Bl. F. A.* 1895, p. 80) describes light foci in the periphery, slightly resembling the specific patches, which may also be

observed in the eye first affected. Casper (*Klin. Mon. f. Aug.* 1895, p. 179) saw an analogous condition in a case of sympathetic disseminated choroiditis.

Sympathetic inflammation of the uveal tract appears as iritis serosa, iritis plastica, irido-cyclitis, plastica or maligna, irido-choroiditis, or they may pass from one into the other. All three parts of the uvea are generally affected, as autopsies have shown, but often during life the condition of the choroid cannot be ascertained. The disease mostly starts in the iris, but it may also advance from behind forward. If uveitis posterior or anterior are primary, the explanation by the migration theory is: Through the perichoroideal space, perhaps from the posterior pole of the globe along the sheathes of the long ciliary vessels the microbes or their toxines may rapidly advance to the anterior portion of the uveal tract and display earlier the clinical symptoms, before the process at the optic disc becomes noticeable. The serous iritis is not as malign as the plastic uveitis which shows a tendency to relapses, always leaving the eye in a worse condition than before, and mostly ends in atrophy of the globe.

Sympathetic ophthalmia does not set in before fourteen to eighteen days after the affection of the first eye, generally in four to six weeks. A maximum interval cannot be set down as a rule, but the longer the intermediate time the more the probability, that the disease of the second eye is of an idiopathic nature. A phthisical eye without any signs of irritation does not cause sympathetic ophthalmia. If after several years an affection of the second eye occurs, the first eye has never been quiet, or it shows some recent inflammation, either by a new infection or a revival of micro-organisms, which have been latent like spores, or from time to time increase to such an extent that they cause a new inflammation.

Quite a number of cases are published in which sympathetic ophthalmia broke out within three to four weeks after preventive enucleation, optico-ciliary neurotomy or neurectomy. In two of Nettleship's cases enucleation was performed one to two days after the injury, but the latter had extended also to the orbit and caused inflammation of the orbital tissues, and this gave rise to the sympathetic affection seven and five weeks afterwards. When the sympathetic ophthalmia exists before enucleation even in a slight degree, the latter does not prevent its malignity. It has been anatomically proven, that both ends of the optic nerve after neurotomy become again united and that a regeneration of the ciliary nerves takes place in that way, that from the central stumps numerous twigs grow into the sclera and the sensibility returns. Therefore if the ciliary nerve theory is wrong and the optic nerve exclusively conveys the virus or sympathetic ophthalmia, then, according to Scheffels, (*Klin. Mon. f. Aug.* 1890) an early and thorough resection of the optic nerve must prevent sympathetic ophthalmia in all cases. Should the latter occur only in one case of resection rightly performed, the whole theory of migration through the optic nerve falls to the ground. Trousseau observed such a case of sympathetic ophthalmia with ensuing blindness two months after resection of the optic nerve of 4 to 5mm. length.

Deutschmann, presupposing a reunion of the stumps, considered this question of such principal importance, that he undertook new experiments for its explanation. (*Beitraege*, hft 10). A piece of three to four mm. of the left optic nerve of rabbits, which was 14 mm. long from the chiasma to the globe, was resected, i.e. the 4-5 to 3-5 part of the whole length, corresponding to Schweigger's claim for effectual neurectomy of ten mm. of the human optic nerve, which measures 38 mm. Two months later one animal died accidentally. Immediately after death he injected ¼ of a Pravaz's syringe of India ink into the subdural space of the skull, and 15 minutes afterward India ink was found in the intervaginal space of the whole right optic nerve. The ends of the left optic nerve were connected by a tract of connecting tissue 2 mm. long, in which as well as in both ends India ink was seen down to the globe. His deductions were: Resection of the optic nerve permanently destroys the nervous conduction, but the nerve ends become reunited by connective tissue. It communicates with the central and peripheral vaginal spaces and leads the lymph current from the brain to the bulbar end more slowly and not as readily as in the normal vaginal space, but without essential difficulty" (p. 27). He further assumes, that microbes or their

toxines may proceed against the lymph current from the globe to the chiasma as well as the India ink did with the lymph current to the globe. At the instance of these experiments Wagenmann (*v. Græfe's Arch.* 41, i, p. 182) modified the regular resection by thorough cauterization of the peripheral end of the resected optic nerve in order to increase the protection undoubtedly furnished by neurectomy, but leaves the proof to later experiments. Velhagen (*Arch. f. A.* 29, No. 14) imitated Deutschmann's experiment, but with opposite results. Staining fluid injected 5 weeks after neurectomy into the arachnoidal space under high pressure did not ooze from the central optical stump, which was tightly sealed by cicatrical tissue. He infers from this, that, if the mode of cicatrization in man is similiar to that in rabbits after neurectomy, no micro-organisms from the interior of the globe can enter the central optical sheath after a lapse of time sufficient for cicatrization.

The migratory theory has met with opposition mostly by Schmidt-Rimpler (*l.c.*), who observed two cases of sympathetic ophthalmia, one and a half years after optico-ciliary neurectomy, and mentioned as the chief point, that no micro-organisms were found in the resected piece nor in the globe which was afterwards enucleated, so that no micro-organisms could have migrated to the other eye. Nordensen, Berry, Ayers, Alt, Randolph, Kuhnt, Ohlemann, Greef, Uhthoff, Schirmer did not find micro-organisms in the eyes which had been removed after sympathetic ophthalmia had taken place. Positive in regard to bacteria in enucleated eyes were the investigations of Limbourg, Levy, Sattler, Snellin, Leber, Abraham, Story, Angelucci, Basevi, Secondi, Waldispuehl, Berry, and Finlay, who used Knapp's material. Deutschmann found micro-organisms in all cases observed in three years after publication of his monograph. (Staph. alb., slender bacteria, clumsy bacilli). Cultures made of two cases showed staphylococcus pyog. aur. He does not infer from this the staph. to be the producer, but thinks that the frequency of obtaining the staph. in cultures is due to a mixed infection with this coccus. In regard to the fact, that not all succeeded in finding micro-organisms in the eye which had been enucleated on account of causing sympathetic ophthalmia, Deutschmann 1, questions whether those eyes really caused sympathetic ophthalmia, the diagnosis being one of probability only. 2d, Micro-organisms often cannot be found any more in eyes, in which they effected great changes, creating their own destruction. 3d. In cases of undoubted sympathetic ophthalmia the interior of the injured eye may be free from micro-organisms, although it is infected, but they are found in the optic nerve, in the intervaginal space and on the surface of the globe. From here, *i.e.*, from Tenon's capsule the microbes may enter the intervaginal space of the optic nerve and migrate to the second optic nerve and globe, as demonstrated by recent experiments of Deutschmann, in accordance with Quincke and Zellweger. Deutschmann had used in his experiments spores of aspergillus fumigatus, croton oil, pus, then cultures of staph. pyogen. aureus and albus, and of streptococcus. Alt produced sympathetic ophthalmia, with abrus prægatorius — injections into one eye; Gayet with pus of the tear sac; Basevi with bacilli from enucleated human eyes, which had given rise to sympathetic ophthalmia; Parisotti with staphylococci. The only track (also found by Gifford) between both eyes, which contained continuously the inoculated bacilli is the intervaginal space of the optic nerves and their sheathes. Deutschmann had in his first series of thirty-five experiments twelve positive results, *i.e.*, thirty per cent.; of the last thirty-five only two; and considers it as experimental luck to obtain positive results, emphasizing the rare occurrence of sympathetic ophthalmia even after severe infections of human eyes. Ohlemann found of 556 severely injured eyes of Schweigger's clinic only two which had given origin to sympathetic ophthalmia.

The objection has been made that the presence of cocci found in the optic nerves, the sheathes and in the intervaginal spaces was due to a general infection. But no observer ever found micro-organisms in the optic sheathes of patients or of animals, who had died from a general infection, and Deutschmann is of opinion, that if it ever should happen, which, however, is not probable, as then the staph. pyog. would be propagated by the blood vessels, not the lymphatics, they would be found perhaps in single foci, but not in continuous

accumulations pervading the whole optic sheath, as in his animals.

Schmidt-Rimpler's theory of sympathetic ophthalmia is, that the irritation of the ciliary nerves of the injured eye gives only the disposition to sympathetic inflammation of the second eye by reflex disturbances of circulation and nutrition. The longer and the more marked these changes exist, the more and better prepared is the eye for the action of inflammatory (bacterial or chemical) agents. But there is no proof that mechanical irritation of the ciliary nerves causes inflammation of the second eye, (if there is no infection combined with it,) as incarceration of the iris in corneal or scleral wounds, or chronic glaucoma in which patients suffer from the most violent irritations of the ciliary nerves, or as the case of Pincus, (*l. c.*) in which an intraocular cysticercus kept up constant irritation of an eye for fourteen years, without creating sympathetic ophthalmia before the infection by the operation happened.

The *migration theory* explains best the long interval between the injury and the outbreak of sympathetic ophthalmia, as the microbes require some time to travel from one eye to the other. If sympathetic ophthalmia sets in three to four weeks after enucleation, the microbes had left the first eye at the time of enucleation, and are on their way on the optic nerve to the second eye. Deutschmann adds to his experiments a description of a case which furnishes the most valuable proof for his migration theory. After an iridectomy, which by infection terminated in phthisis bulbi, sympathetic ophthalmia of the other eye started with neuro-retinitis, afterwards opacities of vitreous, ciliary injection and irido-cyclitis, resulting in almost total blindness. The patient died of carcinoma of the stomach. Micro-organisms in both eyes, chiasma and both optic nerves showed that the optic nerves furnished the passage for their transmission. The micro organisms were bacteria, the species of which could not be ascertained.

Hirschberg (*l.c.*) supposes a creator of granulation tissue (bacillus), as the anatomical examination of recent diseases of the injured eye shows a similarity with tuberculosis (giant cells, granulation tissue) and not the cocci of suppuration. It requires further investigations to determine the producer of sympathetic ophthalmia.

All authors, even those who do not accept Deutschmann's experiments as convincing proof in regard to the way of propagation, consider the sympathetic ophthalmia as an infectious disease, so that it will express best the present state of the pathology and etiology of sympathetic ophthalmia, if we quote Deutchmann's conclusions of his latest work (p. 95:) "Sympathetic ophthalmia, as it was called, is a process of microphytic origin, propagated in the continuity of tissues from one eye to the other by the optic nerve; exceptionally a chemical action may be communicated from one eye to the other on the same track." He suggests instead of sympathetic inflammation, a name designating the disease better: ophthalmia migratoria.

HYSTERIA*

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There is nothing of special interest in the previous personal or family history of this patient. She is a girl of eighteen years, who was brought into the hospital as the result of an accident. She arose one night to quench her thirst and drank from what she supposed to be a glass of water, but which in reality contained a large amount of laudanum. The effects of the drug were almost immediately manifest, the alarm was given, the ambulance surgeon was summoned, who gave an emetic and emptied her stomach so promptly that she showed no very serious results of this accidental poisoning, al-

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though she had swallowed enough laudanum to have balanced her accounts then and there. She was brought to the hospital suffering chiefly from shock and nervous excitement and is now recovering from them.

You will ask, then, what there is about the case of interest. As the result of this shock and the fear of death, the girl has developed certain functional nervous symptoms which are characteristic. Her manner became somewhat excited, her behavior somewhat unnatural, on her body were areas which were highly hyperæsthetic and certain other areas which were anæsthetic, the anæsthesia affecting in particular one side of the face. In a case of this sort, with the history of poisoning and the development of nervous symptoms one might be led astray were it not for these particular symptoms of anæsthesia and hyperæsthesia. On the left side of the forehead she says she feels nothing at all, although as you can see, I prick her so deeply that the pin hangs in the flesh. On the right side she feels perfectly. When I examined her in the ward two days ago, it was the right side that was anæsthetic while sensation was normal on the left side. Now, as I rub my finger over the right conjunctiva she does not feel it, nor did she at the previous examination. This is, therefore, not a case of unilateral anæsthesia to-day, although it was when I examined her in the ward. I am glad that this fact has been brought to our attention for I might otherwise have given you the impression that such anæsthesia or hyperæsthesia was always unilateral, as is often the case. The left conjunctiva seems perfectly normal in sensation, although the left side of the forehead is anæsthetic. Sensibility is good in both hands. I just touch the back of her neck with the pin but she complains of pain, showing that there is hyperæsthesia at that point.

This disease—for the condition is truly a disease—is illustrated in the patient in a light form. Her symptoms have been limited to a varying anæsthesia and hyperæsthesia and a general excitement. This disease may be marked simply by the latter symptom or by a flood of tears, an uncontrollable fit of laughter, or, it may be, by persistent vomiting, by constipation, by the voiding of a large amount of pale urine, sometimes even gallons being passed in the twenty-four hours. Sometimes it is manifested merely by excessive sweating, perhaps limited to one part of the body. There may be coldness, or a local or general increase of temperature: for example, I have known the temperature of the body to be raised to 114° F. with no other cause than hysteria. These manifestations may last for a life-time or may subside. A little while ago I showed you a girl who had suffered from a brutal attack by her husband. She came here supposed to be affected in the brain or spinal cord, for she had a right hemiplegia without, however, disturbance of speech. She made a good recovery with no medication save the injection per rectum of asafœtida in large quantities and by a little mental treatment; insisting that she could walk, helping, encouraging and urging her to do so. She lost her temper one day without any reason and left the hospital on foot.

The paralyses which occur in the course of this disease are sometimes very permanent, sometimes accompanied by convulsions; or there may be convulsions without paralysis. Marked psychic disturbances may occur, such as delusions, hallucinations, mental perversions or peculiar disturbances in which the patient goes into the condition known as catalepsy. Such patients are apt to be sleep-walkers.

For this mild case, I shall prescribe asafœtida. The simple nervines like asafœtida and valerian with such tonics as phosphorus, arsenic and iron are usually all that are necessary but, at the same time it must not be thought that the trouble is a trival one simply because its essential element is the lack of power to control the nervous system. If the asafœtida cannot be administered by the mouth, we will give it by the rectum, using four ounces of the mixture at an injection. It should be introduced through the flexible tube with the patient lying on the right side so as to have the fluid gravitate into the tranverse colon. If the large quantity is not retained, we can use an ounce or two more frequently. We might give half an ounce of mistura asafœtida by the mouth, or we might give the pill of asafœtida and soap in ten grain doses three times a day. A good treatment for the control of violent patients is the injection into the bowel of chloral and asafœtida. Chloral is the best

drug for the immediate relief of the more acute attacks of this disease when there are convulsions or violent behavior. Chloral, however, is not a safe remedy to continue because it is too depressing. Valerian, asafœtida, sumbul and other drugs of this class may be kept up indefinitely without harm, so far as I know. The use of the cold bath, especially of the cold spinal douche, of general faradization or of static electricity may be indicated. Along with these methods of therapeusis, there is need of psychical treatment, not allowing too tender or too harsh usage at home, neither ridiculing nor expressing too great sympathy for the patient, but enforcing a somewhat rigid and, so to speak, tonic mental treatment. Unfortunately, cases of this disease occur most frequently in the ignorant and in those in the lower walks of life, in persons whose mental and moral training is not of the highest kind, and whose minds are easily unbalanced by unnatural excitement or by some trivial occurrence. But although these are the persons most commonly affected, we may find hysteria in any walk of life. When it occurs in persons apparently so situated that we would expect them to be free from it there is usually a neurotic element in the family. There may be the history of insanity, of epilepsy, of chorea, or of sleep-walking, nightmare, or some other curious nervous disturbance; possibly that which goes by the name of neurasthenia.

CHOLERA INFANTUM.

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The summer season in this part of the country is usually productive of results in the bowels of our babies. Civilized babies seem to catch it. There are several hundred Crow papooses in this neighborhood, who murder all hygienic rules in cold blood and yet live. Whether the natural food supply runs short often, or what patent foods the baby of the aborignal mother gets, is not known to the writer. Somebody with a scientific eye and a nose for medical news, might find a broad missionary field on the Indian Reservations of the West.

The white or black baby usually has an attack of cholera infantum when the temperature shows a sudden fluctuation. Probably the coming medical man will know when to exect this kind of practice by watching the Signal Service flags. If heat is a causative factor in infantile diarrhœa, the artificial heat obtained from stoves and flannels, ought to have an influence, something like the suns rays.

Why the bacillus should contaminate a clean healthy nipple is not easy to explain, but we see the sucker getting sick and we blame the suckee. First comes a loss of appetite. This symptom is not often recognized by the proprietor of the baby. The habit of having the nipple exercised becomes chronic and the breast or bottle works on the mind. The child then is the victim of its environment. Its food is literally forced down it's throat. Flatus, colic, peppermint, vomit, diarrhœa, doctor, are so many steps in the evolution of summer complaint.

When the medical man takes charge of the case he is liable to find a patient with a high temperature, disordered stomach and digestive apparatus. Peristalsis may be so vigorous as to cause hemorrhage from some part of the tract. Where it comes from is not so important as to get control of Auerback's ganglion and apply the cardinal rule of surgery: rest to an inflamed surface.

Examination of vomit and fecal matter will give us a clue as to cause and treatment. Undigested particles of food, the presence of bile and mucus, the revelations of the microscope give us warning to get rid of as much of the foreign substances as soon as possible. Mechanical means are here very valuable. If the mucous membranes could only be reached from the outside somebody would likely suggest

iodoform dust. Calomel is universally supposed to be as big a germicide as iodoform, and it is prescribed for its effect on certain ducts. Why should it not have the reputation of a sort of internal iodoform.

Warm normal salt solution is prescribed for lavage of the stomach. This is usually recommended and described as an operation easy of performance. While listening to the lecture of a professor of the healing art, students should remember that skill must be tempered with experience before it is very easy to resort to such measures as turning, application of forceps, intulation, lavage. Where lavage is used it should be performed thoroughly and repeated as often as necessary. With the aid of a cork and by keeping the catheter against the posterior wall it is likely to slide into the stomach without being oiled. When the water returns clear, it is supposed to have done its work. If it is thought that a warm bath will have a needed physiological or therapeutic effect, keep it up for a little longer time.

Both ends of the digestive tract need irrigation, and two quarts more or less of the same normal salt solution slowly introduced though a catheter into the colon and allowed to run off, will do much toward removing irritating matter and soothing a sick membrane as well as a badly starined nervous system. If food is prohibited now the patient ought to sleep. It is better to give spoonfuls of hot or cold water than milk for a day or two after lavage. The child was using milk when it was taken sick, we will say. Do not resume the milk feed for several days, but try to worry along with broth, gruel, meat juice, little chunks of ice.

Thin stools do not indicate so much damage to the digestive function as some people suppose. The anatomical construction of a child's alimentary tract would seem to make them a necessary evil.

High temperature can best be combatted by using water to the child's skin. The antipyretic treatment by drugs is dangerous. A medical conscience which is not troubled by the effects of coal tar derivatives and opiates is a good one. Water used on the outside will meet all the indications for temperature reduction, and opiates must be used where there is pain. Every physician should become an expert in using the preparation which serves him best. If the child is placed in a bath heated to a few degrees less than 100° F., he can be kept there for less than ten minutes, while the water is gradually cooled to not less than 65° or 70° F. Holding ice in the bottom of the tub and agitating the water will distribute the frigidity properly.

In a territory where the sea shore or lakes cannot be reached, a child is often given a new lease of life by taking it on a camping trip to the mountains. A lower temperature is the desideratum, and if it can be obtained, it will be like the continuous antipyretic effect of the bath. What effect a difference of a thousand feet in altitude has on summer complaint is a question.

Artificial feeding must frequently be resorted to, also the artificial introduction of medicines. It is like trying to make water run up hill to nourish a patient by the rectum, but it beats starvation. The administration of medicines by the rectum is still more unsatisfactory. There is no way of estimating how much is taken up, and it is always dangerous to exceed a certain dose.

Hypodermic medication in children is not as reliable as it might be, although most everything has been tried, even to apomorphia in croup. Rice and barley gruel are administered by the unnatural method: So is oatmeal gruel where constipation exists; also the juice of broiled meat, squeezed through a lemon squeezer, in teaspoonful meals. Raw eggs beaten up in water. A good way to beat the eggs is in the ordinary milkshake. The solitary advantage of rectal feeding is the absence of taste in a human being's latter end.

Where the patient has reached the stage of the disease requiring heroic measures, such as stimulation with alcohol, the giving of medicine is like a leap in the dark. Too much credit which belongs to nature, is often stolen by drugs. Hot water to revive a failing circulation is often called for. Musk and gum camphor in glycerine, spirits of camphor hypodermically, nitrite of amyl, and even hydrocynic acid have been recommended.

An antiseptic is useful internally. What, and how to give it has puzzled the elect. There is a great gulf fixed in therapeutics between sulphite of soda, and

bichloride of mercury, and yet both are recommended. Chemical changes in the intestinal canal may make the latter valuable, in addition to its hepatic stimulant effect. Sulphite of soda is what we might call a harmless antiseptic. It is prescribed between doses of bismuth and pepsin. A single remedy, to fulfil all indications, is betanaphthol-bismuth. Where food by the stomach is withheld, pepsin or any other ferment is a gratuitous insult to the sick organs. The absorption of food by the lower end of the intestinal canal is an enigma. Food taken into the stomach is not fit to nourish the body until the changes effected by digestion are accomplished. How then can raw food be of value in the rectum?

When atmospheric heat and septic material have been ignominiously defeated by medical science, the patient may be in a serious condition. The intestinal walls may still secrete pathological mucus. There may be too much milk and water bile in the stools, blood may be found mixed with the fecal mass. Astringent medication may be called for, but the tonic effect of medicines aimed at the central nervous system will also do good. Fowlers solution is reliable, malt and coca wine sometimes acts nicely, if it does not aggravate the diarrhœa. Treating the vomiting is unsatisfactory. If a reliable remedy such as creasote does not arrest it, the best thing to be done is to let the stomach alone. Sterilizing milk is not of very much value after the disease is started. It is likely to upset the stomach. The better plan, if you are going to risk giving milk, is to get a fresh supply from an uncontaminated source. This is not a herculean task in such a high dry, cow country as the Yellowstone Valley. In cities where the real name for milk should be slowpoison, the matter becomes serious.

Nursing mothers often make their babies sick. Women with rheumatism, uterine discharges, tuberculosis, syphilis, gonorrhœa should not be allowed to infect their offspring. If serum therapy ever reaches the point where an antitoxine can be injected into the mammary gland before the child takes its food, some miraculous cures of infantile bowel complaint will be reported.

COMMUNICATIONS.

THERAPEUTICS OF HEART DISEASE.*

HORATIO C. WOOD, M.D., L.L.D., PHILADELPHIA, PA.

Gentlemen of the Cleveland Medical Society: If any unfortunate skipper ever took with him a load of coal to Newcastle, before he had time to unload his cargo he probably felt very much as I do to-night coming before you, for I am not at all sure that I know as much about the subject that I am to speak of as many of you do. And I am very sorry that I was not prepared with a series of thorough doses of Indian hemp that I might hypnotize you into comfort and peace during the administration of the nauseous dose that I am about to give you.

I want to talk to you, nevertheless, concerning a disease which, as you know, is everywhere prevalent throughout the civilized world. And I propose first to carry you back to the days of my childhood, and one of my first patients (an old lady, probably 85 years of age, who had many a time sat upon the lap of Washington) who was redolent with the memories of Physic and of others of the older day medical men of Philadelphia; and who taught me this great lesson: that it is possible, with

*Address before the Cleveland Medical Society, June 28, 1895.

a very small amount of valvular integrity, to pass through a long life of labor and usefulness.

Now when we come to the why of this thing we can go back to our early childhood days and remember how in the frosty mornings we crawled out of bed and ran to the old pump under which we washed ourselves. We had to redouble our strokes in order to keep warm. And this is what the heart does; and it is what we call compensatory hypertrophy. Almost all your practical skill in treating a disease of the heart must rest upon practical skill in deciding, not whether this valve is diseased, or that valve is diseased, but whether the increased power of the heart has or has not kept pace with the increased work required of the heart.

And here I want to say a word in regard to this question of diagnosis. There are some who think that when the aortic valve is diseased, you should never give heart tonics or heart stimulants; that digitalis is not indicated. Not so, gentlemen. The aortic valve is no different in its functions and its relations to drugs than the mitral valve. It so chances that the mitral disease is commonly produced rapidly during youth, and the aortic disease comes on slowly during age, and in the one case the heart is more prone to be unable to adjust itself to the new conditions, and you get cardiac weakness.

It is not a question whether this valve be diseased or whether that valve be diseased, but it is a question of the relation between the work and power.

We want, then, always in every case of heart disease, from the very beginning to guard against this failure of development of compensatory hypertrophy; but before taking up the subject of drugs and their uses in failing heart, let me say a word to you in regard to the effects of failure of heart power. Where does the strain come, or where is the lack apparent? When the heart fails the blood fails to be in the aorta and its tributary vessels; and when the aorta fails and its tributaries are empty the veins are full, and consequently you may take for a sign of failing heart that there is over-venous repletion of the skin, congestion of the lungs and liver and edema of the extremities.

Now I want to call attention to this fact, that it is the liver among all organs, next to the lung at least, that feels this excess of blood in the venous system. Engorgement of the portal circulation is present almost always in every case of heart disease. It is largely for this reason that mercurials are of the value that they are in heart disease. And if I have had any special success in the treatment of this class of cases, it is because I have recognized the value of mercurials. Mercurial purges and corrosive sublimate given in long-continued small doses are of the greatest importance. The fiftieth of a grain, or the sixtieth or even one hundredth of a grain of corrosive sublimate, given with the tincture of the chlorid of iron will sometimes effect almost a revolution, aiding your true heart tonics in the most remarkable manner; aiding, so to speak in the digestion and absorption of the medicine.

I want here also to force upon your attention the necessity of cardiac rest. There has grown up a wide school of therapeutists in Germany who teach that we are to cure heart disease by cardiac gymnastics, climbing mountains, etc. Gentlemen, the heart is an organ that never rests under any circumstances, and do you believe it is common-sense teaching that you can take an organ that has had no rest and is exhausted, and build it up by piling on to the load which nature has put upon up? Not so. Did you ever notice the difference between what we call a fat American or Englishman, and a fat German of the better class. The American or Englishman could walk eighteen hours through the snow, climbing mountains. His paunch might be larger than necessary for anybody to carry, but his arms and legs are iron. But take the fat German, he is usually all fat and beer. In the German mountain cures it is not the extra work put upon the heart that cures, but it is the extra work put upon the muscles of the body that cures. Such cases are not instances of genuine failing heart.

Another set of cases are cured by the mountain treatment. These are the cases with a heart working irregularly because the blood is loaded with uric acid derivatives, or uric acid-like compounds.

But you take a spare American with bad heart and you put him up the mountains, and you ought to put the lid on the coffin so he could carry it up and bury himself.

Leaving these means, which seems to me of great practical importance, I come to ask your attention to the drugs we have to use in cases of failing heart. I have studied adonidin, cactus, convallaria and other of the newer remedies, and I do not think they have real value. I have never seen, myself, any good result obtained from any cardiac drug whatever that could not be obtained from nitro-glycerin, strophanthus and digitalis; and I never had any satisfaction whatever in the treatment of real downright heart trouble with any other cardiac drugs than these three.

First nitro-glycerin. Nitro-glycerin lays itself aside from the two other cardiacs or cardiac drugs, in the fact that it dilates arterioles, and lowers arterial pressure. More than that; nitro-glycerin probably has a powerful momentary stimulant influence on the heart muscle; but if one passes over in the slightest degree the dose, the stimulant action passes immediately into one of immense depression; kill the animal with nitro-glycerin and its heart is relaxed as a wet paper bag; kill the animal with strophanthus or digitalis and its heart is spasmodically contracted.

Then, again, remember that nitro-glycerin, like prussic acid, acts only for a few minutes. The profession has been giving prussic acid for years, three or four times a day. Now, it is a well-known fact that if a man takes a fatal dose of the acid and survives thirty minutes he almost invariably gets well. All symptoms are usually gone in twenty minutes. A fatal dose may show no influence after twenty minutes. How much influence will there be in two hours, from a dose that at no time has caused any demonstrable effect? Now, it is very nearly so with nitro-glycerin; and therefore if you are going to use nitro-glycerin at all, use it in small doses and at very short intervals. It is only valuable as a momentary pick-me-up, to the heart. It is only useful in the crisis of the attack, and is especially efficient if the attack takes the form of angina pectoris. How it acts I do not know. It is very possible it may be by relaxing spasm, rather than by stimulating the heart.

And now let me call your attention to strophanthus. Strophanthus is a drug which is used in the chase. I believe it is true that every drug used in the chase of animals by savage peoples is one that acts either upon the nerve or muscle, the reason being that the man who chases an animal wants to get him, and wants to use something that will stop him from running away. Strophanthus is a muscle poison. It only acts upon the heart as it acts upon the other muscles, but it so happens that in man the heart muscle is more susceptible to its influence than are the voluntary muscles; and so in human medicine we are able to get a stimulant effect on the heart before we get it on the other muscles. It is a drug, therefore, that acts directly as a stimulant to the heart muscle. But there is no reason to think that, like digitalis, it acts further as a tonic than as a stimulant. Then, again, the muscle of the arteries is acted upon by strophanthus and so it contracts the arteries. It increases arterial pressure, it empties the veins and fills the arteries. It differs, further, in its action from digitalis in being more distinctly diuretic; it is much more prompt than digitalis, acting at once; it is much less permanent than digitalis.

Let us now study digitalis, which, always in proper doses elevates the arterial pressure. How? It does it in the first place by contracting the arterioles. It narrows the bloodpaths, it lessens the amount of blood space to be filled. It does this in a two-fold way; by stimulating the vasomotor center in the medulla; by acting on the arterioles themselves. Take a terrapin, cut out its nervous system, leave its heart intact; or cut out its heart, then put your fluid under pressure into the arterial system and have it come out from the vena cava. Add a little digitalis and it almost arrests the flow. It contracts the capillaries directly. But it acts upon the heart more powerfully. Every one knows the full strong beat you get from the drug Especially do not forget that it stimulate. the pneumogastric nerves as well as the heart muscle. It lengthens the interval between the beats. When that beat comes it is a great mighty throb of blood. But digitalis is more than a stimulant to the heart. You take a heart which is beating one hundred and ten to one hundred and twenty times a minute. The veins are everywhere full, the aorta is empty. The diastole has not been long enough for the heart to expand and receive the blood. The heart is continually irritated by impulses coming up from every part of the body crying, Give us more blood. You

give that heart, digitalis. You quiet it, you take off its nervousness, you get the long diastole, you get the powerful systole; so there comes a great wave of blood through the arteries. In the failing heart the coronary artery gets little or no blood. At the very time when the heart is being overworked and overworried it is starving. But when the great wave of digitalis action comes, it swells out the aorta, it fills the coronary artery, it goes into every part of the heart, it brings sustenance and food. The old effete material that has been clogging the heart walls is also squeezed out by the powerful contraction of the muscle. Thus digitalis acts as a heart tonic, but it does more than this.

Gaskell has proved that there are two functions or stages in the heart life. What is true of the heart life is true, I believe, of every portion of the human body. A period of functional activity and structural down-tear alternating with a period of functional rest and structural up-building. During diastole of the heart there is no functional activity; relaxation. During systole there is functional activity. During systole this functional activity is accompanied by destruction of tissue. During the period of diastole, or of functional rest, every force in the heart is given to repairing the ravages of function, and there is restoration and up-building.

Now, it is the pneumogastric nerve that occasions the inhibition or stopping of functional activity in order that the structure of the heart, which has been worn, may be up-built. My own belief is that every portion of the human body has behind it this principle. The spinal cord has its inhibitory centers. Every nerve cell has above it a higher nerve cell that inhibits it. However this may be, during diastole the pneumogastric grasps the heart firmly and says to it, "Let the workmen build up the ravages in the walls."

Digitalis has the power of stimulating to a point of intense activity the pneumogastric nerve. Expose a frog's heart, give it digitalis, and you will see the strange fight for mastery between the irritated pneumogastric nerve, and the irritated heart muscle. Sometimes the digitalis arrests the frog's heart in diastole. It never does this after section of the pneumogastric nerve. It is when the pneumogastric nerve gets victory over systole, that there is arrest in dilatation. Now, don't you see how digitalis acts in failing heart? Not simply as a stimulant but also as a tonic. It brings food to the heart at the time of its starvation and overwork; it squeezes out of the heart muscle the effete matters which have been lying there; especially does it stimulate the pneumogastric nerve, the trophic nerve of the heart, enabling it not only to quiet the heart into long diastoles, but to hasten during these periods the up-building of the heart structure.

Every now and then in our hospitals we see a case of heart disease in a poor man who has had no rest and no medical treatment; the heart seems hopelessly feeble, but a short course of digitalis brings not only immediate relief but seems to lift the whole man up to a higher plane. It is because the digitalis has really helped the trophic nerve to use the food which has been given to the heart by the use of digitalis to the restoration of the structure which was almost destroyed.

Before applying these considerations to individual cases, let me say a word or two about the preparations of digitalis. It does not make any difference which preparation, provided it has been made from a good drug. I speak now of the officinal preparations of digitalis. Digitalin is always a doubtful theme. Of two specimens one will be soluble, one insoluble; one is called the French, the other German. Digitalin is not of the nature of the active principle. It is a mere extract of digitalis more or less purified. There is a wide-spread belief that the infusion of digitalis is better than the tincture. Not so, gentlemen. The reason of the belief is that proportionate doses are not used. Commonly, digitalis tincture is given in 5 to ten drop doses, the infusion from a teaspoonful to a dessert-spoonful, which is equivalent to about 20 to 40 drops of the tincture. Results are obtained from the infusion because it is given in larger doses.

Sometimes you will find a stomach that the infusion will agree with better than the tinctures. Sometimes one that the tincture agrees with better than the infusion. Practically there is no difference. Again, the tincture of digitalis lends itself fairly well to hypodermatic medication; infusion you can not use.

I do not propose to occupy your atten-

tion at all with discussing the ordinary use of digitalis in heart disease. Only to call your attention to certain points. First let me say a word in regard to its employment in acute endocarditis, acute heart disease. Early in the case, digitalis is very rarely indicated. It is more apt to do harm than good. The heart is already in a state of irritation. There are some cases of endocarditis—septic or malignant endocarditis—in which it does not make much difference what you give. But in ordinary rheumatic endocarditis, digitalis does harm. The heart is not weak but overirritated. Usually tincture of aconite and similar drugs are what you want to try. But when the storm has gone by, the only salvation for the stricken child is the upbuilding of that heart into a great powerful organ that shall enable it to overcome the leak that has been left in the valve. There is no power to repair that valve. There is no rag that we can push or stick into that broken space. There must be increase of power, and so under these circumstances, so soon as the acute disease has passed by it is absolutely important to begin the use of digitalis in small doses continually, given with great watchfulness. Recollect here, as in other cases, that when you give digitalis you give a drug which has a persistent influence. The moment you get the slightest effect that moment you stop the drug, for you know that effect will last hours, perchance days.

Passing by the ordinary use of digitalis, let me call your attention to its administration in large doses. And here I beg of you not to misunderstand me; I do not mean to say that the doses of digitalis I am going to speak of are to be used in the ordinary cases of heart disease. But there come times in the life of almost every case of heart disease when the heart fails to respond at all to the moderate dose of digitalis, and when the large dose of digitalis will have a most pronounced and beneficial effect upon it.

A case happened to me two or three months ago. I was sent for by Dr. S. to see a case in consultation. The man, 76 years of age, had one pleura two-thirds full of water. His pulse was, as far as one could count it, 160 to 170 a minute. It was a mere broken confused jumble of pulse beats. The man had been sick eight weeks without conscious sleep; sitting up struggling for breath.

"Doctor," said the physician in charge, "I sent for you to back me up in tapping this pleura."

"I don't think that pleura ought to be tapped. However, I will back you up in doing it, provided you tell the wife of the man that he is liable to die during the operation." This was done and the wife said, "Then he had better die without operative procedure."

"Now," I said, "let me try digitalis. Give that man 40 drops of digitalis now (6 o'clock), give him 40 drops at 8 o'clock, 40 at 10 o'clock, and then hold off."

I went there the next morning. The old man had slept soundly the whole night. Had begun to urinate freely (he had had nearly complete suppression), and his pulse was down below 100, perfectly regular. The result was that the man came down to see me in my office not many weeks afterward, and has been going about apparently in good health ever since; of course with a diseased heart.

There are cases in which you have to keep these doses of digitalis up. There is a certain large graveyard in the suburbs of our city. Years ago when I had worked out these thoughts to my satisfaction, I was sent for by an old German doctor, to take charge of a patient whose window overlooked this graveyard, while he went on his vacation. The lady was sitting up in bed or on a chair, in perpetual horrible orthopnea. This old German was a very plain-spoken man. I asked if I might try the use of very large amounts of digitalis. The doctor explained my wish to the patient, saying: "All right, Sarah, what the devil is the use of your sitting there for weeks? This young doctor says he will either put you in the graveyard, or get you down stairs. You had better be in the graveyard than as you are, so you had better let him try."

She said: "Very well. I would a good deal rather be in the graveyard."

I gave her about two teaspoonfuls of tincture of digitalis a day. She was down stairs in two or three weeks.

Not long after that I had another case. A banker somewhere from the West. He had been taken acutely ill, or rather chronic disease blossomed out in full while he was attending to some business in the East. He had been under homeopathic

care for three or four weeks in perpetual orthopnea. I put him on enormous doses of digitalis, and the result was that in one or two weeks he was able to go home

Now, gentlemen I mention these cases to you, not simply as examples of the results that can be obtained by large doses of digitalis, but to point out to you a further lesson.

The ending of the first old gentleman has not come yet. But it so happened one day in the course of some months after, the woman whom I put upon the digitalis had been going about attending to her household duties and she went to market. Returning with a light basket in her hand she fell dead over her own lintel. And the banker from the West went back to his office and gathered together the gold, but it so happened one day that as he was reaching forward to put his clutch upon the yellow coin he fell dead across his counter.

Some would say it was the digitalis killed them. But such is not the truth. It is not digitalis that arrests that heart. It is the power of digitalis to quiet the nervous condition of the heart: to feed up the heart as far as may be, to keep it going as long as it can, until at last there comes a time when there is not one grain of power left in the heart. When the power had all gone out of the banker's heart it ceased. That is the effect of digitalis. When you venture to give these large doses of digitalis in the treatment of cases of heart failure, tell the patient, or at least the friends of the patient, that this thing will come. Remember, the patient will live longer than if left to himself. It is better to live months of comfort, and perhaps a year or two, and then drop dead in the harness, than to struggle in agony for a shorter period.

A few words in regard to the so-called cumulative action of digitalis. Digitalis may be given through a length of time and suddenly there comes an explosion of its action. I remember a case of pleurisy I had. I was using digitalis to stimulate the kidneys and get out the fluid. I went there on Sunday; the pulse, which had shown no effect of digitalis, had fallen from 106 to 80. I stopped the digitalis. Monday the pulse was 70; Tuesday the pulse was 60; Wednesday the pulse was 40; Thursday the pulse was lower still, and I began to wonder what the pulse would be on Saturday. But when the pulse got down somewhere between 30 and 40 there it stopped, stayed so three or four days, and then came up.

I have never yet seen but one case hurt by the use of digitalis, and that was a case of mistaken diagnosis. A lady had been under the care of two or three of the best doctors in Philadelphia; was supposed to be dying. I was sent for and she was placed under my care, as her husband did not believe in consultations. She got worse. I kept on with the digitalis until it suddenly occured to me, This is a case of digitalis poisoning. I stopped the digitalis and she began at once to come up. I never told my secret and she thinks I am a great doctor. There was no true heart failure; only neurasthenia, from gastric catarrh.

This cumulative influence comes on at certain times: first place, when the drug fails to act upon the kidneys; second place, when it is already in the body. You have a case of dropsy; you tap—reduce the pressure. Instantly the blood vessels take up the serum; that serum is loaded with digitalis. Then comes digitalis poisoning. It is not the drug that is in the body, but the drug that is in the blood that affects the heart.

A practical induction is: When you expect to tap a man suffering from heart disease or from any form of dropsy in which you have been giving digitalis, cease your digitalis for a length of time before you tap him.

Years ago I noted one class of seemingly incomprehensible cases. Cases of mitral valve insufficiency; in which the heart seemed to be in the last stage of weakness; cases where I said to myself, "This man will be picked right up by digitalis." But when I gave the digitalis there came increased heart dullness, and an anginous horror that instantly demanded the withdrawal of the drug. I was sure that I was right in my diagnosis that the heart was weak and failing. I was sure that I was right in my physiology that digitalis was a heart tonic and stimulant. But when I put the two things together they did not work. The cases always went from bad to worse. At length I worked out the problem. The cases were, all of them, cases of mitral insufficiency, and they were really cases of exceedingly weakened

auricle; an auricle that was toned down and thinned out until it was little more than the thickness of paper. Now, under the influence of digatalis there came back a reflex wave through the mitral valve and that met the blood pouring in from the pulmonary veins. The thin, paper-like auricle could not stand the double pressure. It could not stand the strain of the blood pouring in and the blood pushing back through the insufficient mitral valve by strengthened systole. Whenever this condition exists nothing can be done. It is the shadow of death, and death very near at hand.

Digitalis has been much used in treatment of aneurysm. Gentlemen, it is death in aneurysm. The reason surgeons have not killed more cases of aneurysm is because they do not use digitalis in large enough doses to have any effect. Digitalis is the most dangerous drug known in aneurysm. You give a certain amount of strychnin, or a certain amount of atropin and get, let us suppose, 20 per cent. of increase of arterial pressure; but the pulse wave is small. Digitalis puts up the arterial pressure 20 per cent. but it does more than this. It makes a long diastole. It makes a great wave of blood; not a little tiny thread, but a great mass of blood rushing with full force down the arteries, coming into the chamber enlarged by atheromatous degeneration, stretching and tearing everything before it. It is the immense distension due to the large blood wave under the influence of digitalis which makes the drug especially dangerous. This is not merely theory. Some years ago a man was picked up in the street and brought into the hospital. He had a pulse you could scarcely feel; temperature 4 or 5 degrees below normal. I ordered digitalis to be freely given. At my visit the next day the man was sitting up enjoying himself, talking and laughing. I put my hand on his pulse and I got the tremendous big strokes of digitalis. As I was directing that the digitalis should be stopped, the man sprang with a great cry up into the air; there came a crimson flood from the mouth and nose, and the man dropped back dead. That man had an aortic aneurysm; we had ruptured it with our digitalis. At the autopsy the aneurysm was found torn right across. Gentlemen, when you have an aneurysm to deal with, don't use digitalis.

Let me speak of the contrast between digitalis and veratrum viride in the treatment of pneumonia. You have a case of pneumonia in the first stage. You give veratrum and you lower the heart action. More than that, you open out every blood vessel in the body. Here is the blood in that lung in excess. You can put the whole of the blood of the man in the addominal vessels. You take away the blood from the lungs and put the whole body upon one plane of dilated arterioles, so to speak. That is what veratrum viride does in the beginning of pneumonia.

If you have a lung in a man in which the general system is adynamic, you can get at the same result in a different way. You have general relaxation. Now you give ergot freely, which contracts the blood vessels and brings about the same result by contracting the blood vessels in the lung and the whole body.

Digitalis comes into use in pneumonia in an entirely different stage. How does that man die in advanced pneumonia? Very often from paralysis, exhaustion or arrest of power of the right heart. What is the reason? Because the right heart, heated almost to death by the fever, has to force blood through paths narrowed by the pressure of the exudation upon them. You give digitalis; it stimulates that right heart. It does not cure the pneumonia but it keeps the right heart up to its work, and by and by the pneumonia subsides.

In regard to the use of alcohol in etherization. Some years ago there was reported a case wherein a woman had cardiac failure from etherization, and brandy was given her. Six or eight hours after the etherization she died of heart failure. Is this wonderful? This woman had a pint and a half of brandy; that, not the ether, was the cause of death.

What is the difference between ether and alcohol? Only a little water; physiologically there is no difference. Then, again, you might as well give ether as alcohol to a failing heart. This is not mere theory. Test it on the animal. As you give alcohol, less ether is required.

By no dose of alcohol, internally or hypodermically, can you bring up the artireal pressure of the animal poisoned by ether. You might as well give hypodermic injections of ether in the failing heart of etherization. There are surgeons fatuous enough

to do even this thing. Gentlemen, dose it make any difference to the heart whether a drug which is in the blood has been picked up in the left leg or the right leg, in the lung or in the buttock? Is the heart a sentient being that it can tell where the blood got the ether? Why not crowd the ether on the sponge and give it to the man by the mouth. Sometimes these hypodermic injections do *seem* to arouse the patient. It is because they are a local irritant and reflexly excite the heart, the same as holding ammonia to the nostrils. But just so far as the ether is absorbed just so for it aids in overcoming the heart.

The only drugs which, in these failing insufficient hearts, I have found to be of value are strychnin, cocain and digitalis. Digitalis should be given hypodermically. More than this: I have found in the lower animals that the lowered pressure under chloroform or ether is brought up wholly by digitalis injected into the veins. More than this; I have found that digitalis given before the anesthetic has a remarkable power in steadying the heart. Whenever you have any reason in any case to especially fear cardiac depression from the use of the anesthetic, precede the anesthetic by your digitalis. And precede it long enough so that the heart shall be under the influence of that digitalis when the anesthetic is given.

And with digitalis always use strychnin in the accidents of anesthesia. It effects the respiratory function probably more than it does the cardiac function, but it certainly has some power in backing up the action of digitalis on the heart.

And then there is another drug which is of equal value with strychnin, and which can be associated with strychnin; and that is cocain. It acts upon the respiration and circulation about as strychnin. In the chloralized dog you can raise the respiration by as large doses of strychnin as can be given without producing convulsion, and then by giving cocain get a further increase of the respiration. You will find in cases of adynamic, advanced pneumonias, where you want to sustain the respiration as well as the circulation, that the combination of strychnin and cocain is of especial value.

EXTIRPATION AND COLOTOMY IN CASES OF CANCER OF THE RECTUM.*

LEWIS H. ADLER JR., M.D.,† PHILADELPHIA, PA.

Colotomy and extirpation are two recognized procedures for the relief of malignant disease of the rectum. Both operations offer to the patient a chance of prolonging life; and, in addition, extirpation holds out the possibility of effecting a radical cure in selected cases.

The choice between these two methods is a question of uncertainty only in a relatively small group of cases, and extirpation is not to be considered in the majority of instances, for the reason that the disease is usually an incurable malady, and by virtue of its concealed position within the rectum its presence is not revealed or even suspected until the growth has existed for some time. Furthermore, is is rare for cancer of the rectum in its incipiency, to manifest itself by any symptom pointing to a lesion within the bowel. This is a familiar observation to all surgeons.

It frequently happens that a patient comes to us complaining of some slight diarrhœa or other mild rectal trouble, and an examination unexpectedly reveals the fact that cancer is present to such an extent that it is obvious the neoplasm has existed for a considerable period. Consequently, its complete removal is often rendered impossible. Again, the patient's vitality is such that so grave an operation and one requiring the length of time for

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its performance, as an excision, is contra-indicated.

In arguing thus, I would not convey an impression that I am opposed to extirpation for malignant disease of the rectum in suitable cases; on the contrary, I firmly believe it to be a perfectly justifiable operation when the growth is circumscribed and confined to the lower five or six inches of the bowel: provided, however, that the tumor does not involve all the coats of the intestine; that it has not attacked the viscera which are intimately associated with the anterior wall of the rectum; that it has not invaded the pelvic glands, or by metastasis any of the other organs of the body; and finally, that its growth be not rapid nor have a tendency to spread widely. From these considerations, it naturally follows that the number of patients who can be benefited by excision of the disease is comparatively small.

Colotomy, on the other hand, is indicated in a large number of instances where it is quite impracticable to attempt an excision. The advantages of the operation lie partly in the relief it affords to symptoms and partly as a means of retarding the growth of the neoplasm.

To indicate the relief afforded such patients by a colotomy, I can not do better than quote the opinion of Kelsey on this subject as expressed in the fourth edition of his work: "Diseases of the Rectum and Anus." This authority is not only a strong advocate of the operation, but is also in a position to judge of its merits by reason of his large experience. He thus states his views:

"As to the benefits arising from the operation, too much can scarcely be said. That it prolongs life by the relief of pain, the preventing of obstruction, and retarding the growth of cancerous disease is beyond question. That it substitutes in many cases a painless death for one of great agony is indisputable. The idea that it is as well to let a patient die as to subject him to a colotomy has no supporters among surgeons who have had any experience with these cases. Indeed, I think that the practitioner who to-day sat by and allowed a patient to die of obstruction because of any sentiment against this procedure would hardly be held blameless. I can only say that, after trying every other means of treatment and being obliged to admit the fruitlessness of them all, I have come, with most others, to admit the great benefits of colotomy, and *have never performed it in any case in which either the patient or myself has afterward regretted it.*" (Italics mine.)

In another article, Kelsey mentions even more minutely the advantages of this operation, as follows: "Colotomy, especially inguinal colotomy, relieves pain; does away with the constant tenesmus and discharges from the rectum, which by their exhausting effects are the immediate cause of death; delays the development of the disease by preventing the straining and congestion of defecation; prevents absolutely the complication of intestinal obstruction, which is another cause of death; enables the patient to sleep, eat and gain flesh, and often makes him think himself cured in spite of the plainest prognosis to the contrary. Instead of passing his days and nights upon the commode, wearing out his life in the effort to free the bowel from its irritation, he has one or perhaps two solid fecal evacuations from the groin in twenty-four hours.

In conclusion, I would like to allude to one more topic, to-wit: the choice of sites of opening the colon. I mention this subject with the sole purpose of eliciting the present views of the members of this society. My own belief is that the inguinal region is to be preferred in the majority of cases. Its advantages over the lumbar operation are, to my mind:

1. The smaller incision and lesser depth of the wound requisite to reach the colon, and the minimum amount of disturbance of the structures overlying the seat of operation.

2. The greater facility offered for the exploration of the abdomen, when such a procedure is required.

3. The better position for safe anesthesia, during the operation.

4. The comparative ease with which the colon may be identified in this position, and the little difficulty experienced in fixing the bowel to the skin without undue tension on the stitches.

5. The greater readiness with which a good spur may be formed.

6. The convenience to the patient of the site, for purposes of cleanliness and for the adjustment of pads; and

7. The recent statistics seem to indicate that it is the less dangerous operation.

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SATURDAY, AUGUST 17, 1895.

EDITORIAL.

UNDER COVER OF CHARITY.

The Scriptures exhort: "Above all things have fervent charity among yourselves; for charity covereth the multitude of sins."

The fact that sins exist under cover of charity, does not render them any the more venial, nor does it justify continuing their existence. Moreover, the charity specified as among Christian Graces the greatest, is the antinym of the modern philanthrophic disgrace yclept charity. "Charity," as defined in Holy Writ, "suffereth long and is kind, envieth not, vaunteth not itself, is not puffed up, doth not behave itself unseemly, seeketh not her own, is not easily provoked, thinketh no evil, rejoiceth not in iniquity but rejoiceth in the truth, beareth all things, believeth all things, hopeth all things, endureth all things, never faileth." The distinction is obvious without further comment. Now-a-days, the professional philanthropist, too often, is he who, "with one hand puts a penny in the urn of poverty and with the other takes a shilling out."

Had Edmund Burke been speaking of the subject, he need only have substituted the word charity for liberty and he would with equal truth have given the definition: "What is charity without wisdom and without virtue? It is the greatest of all possible evils; for it is folly, vice and madness, without tuition or restraint," and Madam Roland well might have exclaimed: "Oh, Charity! Charity! how many crimes are committed in thy name." The experience of modern organized humanitarian effort would bear out these assertions. For if one lesson has been thoroughly learned it is that open-handed and indiscriminate alms-giving, without any effort at return on the part of the beneficiaries, pauperizes poverty and degrades pauperism.

We are prompted to these remarks by an editorial which recently appeared in the *Times and Register*, under the cap-

tion, "How about the little fishes?" and which appears in another column.

THE REPORTER has frequently and distinctly defined its position in this matter, and has deplored the multiplication of medical-pauper factories. To the uninitiated observer there would be no doubt as to the propriety of the individual dispensing free medicine equally with the wholesale eleemosynary institution—at any rate, no difference from the standpoint of morality. But to those who are skilled in the refinements of codic ethics, the distinction is most definitely drawn, and the individual guilty of the heinous crime of free and indiscriminate dispensing is obviously no fit company for the righteous profession which may fall all over itself in its eager struggles to obtain appointments to large institutions whose practices bear the same relationship to the misdeeds of the individual that making a corner in wheat or other food-stuff bears to the petty larceny of a loaf of bread from the open window of the bake-shop.

No one will deny that the charges brought against the system of free medical dispensaries, as it obtains in the cities of this country, are in the main true, and that the present tendency of hospital and dispensary service is to degrade patients, defraud patrons and demoralize the profession. Although the abuse is occasionally deplored by physicians who do not enjoy the alleged advantages of institutional connection, the matter is slighted off by others who have such appointments and who are well aware that so long as the subject can be continued as everybody's business it will be treated as nobody's business and their opportunities for self-aggrandizement will not be imperilled.

Observe the difference between the free medical dispensary which is condemned as charlatanry and that which bears the stamp of ultra codic grace. It is an illustration of the refinement of differential diagnosis. Both cases mentioned are actual occurrences of recent date and in the same city.

In the first instance a number of qualified physicians, having more profession than practice and more discernment than discretion, conceived a plan which was to benefit the "poor and needy, the sick and suffering, etc., etc.," and at the same time bring to themselves the coveted opportunities for achieving reputation—possibly even professorships—without incurring expense to themselves, and with the remote possibility of increasing their personal income. The scheme, in brief, was to issue commutation tickets, good for stated periods, which for a small consideration would entitle the holder to advice and treatment during that period without further expense; and the commutation tickets were made transferable. The intention was to reach that large class of the population whose income is limited but whose self-respect denies them accepting gratuities. The plan flourished exceedingly until the profession awoke to the fact that it was being defrauded by unholy methods of competition. Then it rose in dignified might and sat upon that scheme. It could not tamely submit to being robbed in such an unethical manner. It was notable that those connected with services where advice and treatment was entirely gratuitous, and where the running expenses were met by the contributions of the benevolent or appropriations from the public treasury, were not lacking in denunciation of this bare-faced robbery. The upshot of the matter was the promulgators must turn from the error of their way or incur the penalty of professional ostracism. Very wisely the provident ones did penance and secured pardon, while "the poor and needy, sick and suffering etc., etc.," were deprived of the opportunity of paying for medical services at excursion rates, and must

accept their healing gratis or patronize unattached physicians.

The motives underlying this attempt to establish a mutually benevolent Siloam—a cure pool—were similar, save that they were better, to those which succeeded in constructing an ethically correct medical-pauper factory—as in the second instance noted. In this latter case the originators likewise were churning butter from the milk of professional philanthropy, but they were much wiser in their generation, and could hunt the trail of policy so sure as old Polonius had used to do. The difference between the methods used was quite as notable as the difference between the results obtained. Success was reached by securing from the lay intimate friends and relatives of the astute philanthropists, a number sufficient to incorporate under law. The charter, which required that those executing the trust should be elected by those contributing the means, was beautifully designed to keep the corporation close. A distinction was drawn among contributors, and the power to vote depended entirely upon an election by the trustees to a voting contributorship. The membership of this latter body was not extended beyond the board of trustees. *Verbum sapienti sat.* A solicitor of contributions was liberally commissioned to work upon the sympathies of the "charitably inclined," and to initate them into the blessedness of giving and thus lightening the burdens of the philanthropic trustees. Finally, the state was seduced into diverting public moneys for its support. Within a few months, the chief executive of the commonwealth has authorized the expenditure, during the two years forthcoming, of many thousands of dollars for the operations of an institution essentially personal. It dispenses free medical treatment to a class of patients amply provided for in other institutions which are legitimately entitled to public support. The manipulators of this institution have secured all the objects the promoters of the first scheme planned for and failed to obtain. Whatever the difference between them in righteousness codified ethics may ordain, from the standpoint of morality the distinction seems about the same as the fundamental difference between larceny and embezzlement.

The subject is too extensive to be dealt with off-hand, nor does the REPORTER profess the ability to solve the problem. It would be folly to condemn benevolent institutions simply because evils are liable to develop in the management. But to sit supine and allow flagrant and vicious abuses to go unrectified, would be an exhibition of cowardice unworthy of the profession which justly claims itself unconquerable. We do not know what may be the situation in Great Britian which the Executive Council of the British Medical Association confesses itself impotent to deal with, but we would not for one moment admit that in this country an united profession with opinion crystalized, could not so greatly mitigate the dispensary abuse as practically to eliminate it.

The difficulties to be overcome are real and often puzzling. The abuses so thoroughly permeate the entire hospital system, that to extirpate the malignant growth might require the sacrifice of some sound tissue. Furthermore, from the outset, vehement and persistent opposition will be met with in the profession itself, for those who profit by the existing system could scarcely be expected to aid in its abolition.

A plan which would seem to promise efficiency, is suggested by the recent action of the New York County Medical Association in appointing a committee to investigate the abuses complained of in that city, and to devise methods to remedy them. Make the plan here adopted of general application by county societies, then by the state societies, and, finally, by

the national associations, and the professional sentiment thus crystalized would become an influence of such magnitude and power as to make or to break medical benevolent institutions. Consider the effect upon the legislature of any state, of a forcible and public protest, authorized by the body representing the organized profession, against the misappropriation of public moneys to medical charities demonstrated unworthy after impartial investigation. Legislatures, perchance, would find the necessity of explaining to the satisfaction of their constituents the wherefores of these little interchanges of courtesies, sufficient reason to give themselves pause. There is little doubt that if public support were entirely withdrawn from all medical charities not under the direct supervision of the state itself, while some hardship might be wrought, a gigantic stride would be taken towards the abolition of the much contemned abuses. Then again a similarly authorized expose of those institutions, whose continued existence depends upon success in striking water when boring in the fields of private benevolence, would soon shut off the sources of supply and the thirsty corporations would die out of inanition.

ABSTRACTS.

HOW ABOUT THE LITTLE FISHES?

The late exchanges from across the water inform us that in England the whole profession is in a red-hot ferment on the hospital and dispensary question. The latest echo from our transatlantic cousins comes to us in the form of a protest, presented by London practitioners against opening pay wards in the Great Northern Hospital. Practitioners in that hospital district, learning of the new scheme about to go into effect, called an indignation meeting and sent a protest to the Board of Managers against admitting to the wards of a public charity those who were able to pay for nursing and attendance, as it was in direct contravention of the spirit and purpose of such institutions, which are intended only for the poor and destitute. But as we might expect, the managers contemptuously ignored the respectful appeal of the general practitioners, and, in defiance of it, invited all to enter who had the sovereign to pay.

In the meantime, the resources of St. Thomas' Hospital have become reduced in spite of the prostitution of the endowments of that institution to support pay wards, and, notwithstanding the piteous appeal of the Duke of Connaught for contributions, money has not been forthcoming.

In America those collossal infirmaries and smaller fry which appeal to the public for support are working incalculable harm to legitimate practice. The wail of the colleges that clinical material must be had is a deception. As a matter of fact there is an excess of material for teaching among the destitute poor and needy.

Some of our leading medical journals have been finally moved to open sieges on the medical colleges and hospitals. The "Medical News" attacks hospital managers and college faculties in a merciless manner, and the "Journal of the American Medical Association" falls into line, laying the lash on unsparingly, particularly, and unjustly we think, in the case of post-gradute schools.

In New York city, at the last meeting of the County Medical Association, the management of the principal public, college and private hospitals and dispensaries was fiercely denounced. They were charged with deceiving a public, abusing a trust, demoralizing and pauperizing the medical profession; and a committee was organized, with Dr. Douglas H. Stewart as chairman, to immediately institute a searching investigation into the whole subject, and if ground for action was later found necessary, to rally the whole force

of general practitioners to meet and crush the evil which threatens their near extinction, or will make it impossible for one to maintain a respectable existence in his profession. We understand that the committee will force this matter on the notice of the city government, and in the winter seek legislation at the capitol.

In all our larger cities, and indeed in many of our smaller villages, sanitariums, women's hospitals and various special hospitals, with free dispensaries without number, are cropping up. The methods of some of these unquestionably are to say the least, rather "shady." In one's morning newspaper, folded up, is a circular notice of the "best free treatment by eminent physician;" handbills are scattered through the tenements, and frequent newspaper notices of them appear. Now, the serious question arises, What can the profession do, if anything, to remedy the present hospital and dispensary evil? For it would seem that unless some drastic and far-reaching remedy is applied, in spite of our vaunted State laws and examinations, in the very near future we will witness in this country a State charlatanry and quackery contrasted with which the worst ever witnessed would be but a mere shadow.

The council of the British Medical Association has recently declared itself quite impotent to deal with the evil. Anyone, it seems, is free to give his time for nothing if he pleases. Ambition to be a consultant or a "professor" it seems is no crime, and of this latter commodity there is no special dearth, for we hear of one of our medical colleges with a staff of fourteen professors, with great pomp and gusto, out of a large class of seven students graduated two.

It had been lately suggested that a way to meet the free dispensary competition would be to have all large cities districted and provided for means of attending all needy applicants. This, it was thought, would cut off some of the supplies of the larger concerns and provide something for practitioners to do, to utilize their excessive leisure.

However, much as we may dislike to admit it, the fact and the truth are that if the principle of free and indiscriminate treatment is right for mammoth institutions, with a large number of physicians attached to them, who are there for what their labors will bring them, it equally applies to the single practitioner as to a few to indulge the luxury and pose as philanthropists.

SOME COSTLY PHILANTHROPHY.

The Governor of Pennsylvania has signed the following appropriation bills for Philadelphia institutions, passed by the Legislature during the session just closed: University of Penn., $200,000, and the Hospital department of the same, $55,000: Jefferson Medical College Hospital, $112,000; Medico-Chirurgical Hospital, $150,000; Kensington Hospital for Women, $5,000 Maternity Hospital, $5,000: Memorial Hospital, Roxborough, $7,000; Philadelphia Orthopedic Hospital, $5,000; Philadelphia Lying-in Charity, $6,000; Gynecian Hospital, $25,000; St. Christopher's Hospital for Children, $4,000; Woman's Hospital, $8,000; Rush Hospital for Consumptives, $10,000; German Hospital, $20,000; Philadelphia Home for Infants, $5,000; also Homeopathic Medical and Surgical Hospital and Dispensary, $50,000; Children's Homeopathic Hospital, $8,000; Hahnemann Medical College Hospital, $57,000. Outside of Philadelphia the following appropriations were also made: Columbia Hospital $3,000; Scranton West Side Hospital, $4.000; Reading Hospital, $15,800; Reading Homeopathic Hospital, $10,000; South Bethlehem, St. Luke's Hospital, $20,000, Easton Hospital, $15,000; Conemaugh Valley Memorial Hospital, $10,00; Chester Hospital, $10,000; Scranton Lackawanna Hospital, $25,000; Lebanon, Good Samaritan Hospital, $6,000; Pittston Hospital Association, $14,000; Carbondale Hospital Association, $12,000: Pottstown Hospital, $14,000; Pottsville Hospital, $10,000; Charity Hospital, Montgomery County, $9,500; Lancaster General Hospital, $4,000; Chester County Hospital, $6,500; Jefferson County, Adrian Hospital Association, $10,000; Altoona Hospital, $12,000; Westmoreland Hospital at Greensburg, $6,000; Wilkesbarre City Hospital, $25,000; Williamsport Hospital, $12,000; Pennsylvania State College, $212,000; Western University, $50,000.

SYNOPSIS OF CASES OF APPENDICITIS TREATED DURING THE YEAR IN THE PENNSYLVANIA HOSPITAL.

I. R. C. Admitted fifth month, 16th, 1894. Male, white, Italian, laborer, aged 15 years. No history of a previous attack. Sick for nine days prior to admission. Cœliotomy was performed a few hours after admission, and an abscess was found in the region of the appendix, entirely shut off from the general abdominal cavity by dense adhesions. In the abscess there was found a round worm twelve inches long. The appendix was not found. Recovery.

II. D. L. Admitted sixth month, 14th, 1894. Male, white, Italian, age 7 years. Died a few hours after admission. Autopsy showed a large diffused abscess in right iliac region. Appendix could not be found.

III. D. L. Admitted sixth month, 21st, 1894. Male, white, Russian, age 43 years. Had a distinct history of a previous attack some years before. No operation allowed. Treatment, calomel in fractional doses, with the application of belladonna and mercury ointment under a flaxseed poultice to the region of the right iliac fossa. Recovery.

IV. I. S. Admitted sixth month, 23d, 1894. Male, white, Russian, aged 57 years. Had been sick about one year before his present illness, a bowel trouble, the nature of which could not be determined. He had been sick for a week when admitted to hospital. Declined operation. Treatment, fractional doses of calomel, belladonna and mercury ointment underneath a flaxseed poultice to right side of abdomen. Insisted on going home five days after coming to hospital. He was slightly improved when discharged.

V. J. B. Admitted sixth month, 29th, 1894. Male, white, American, age 10 years. No history of previous attack. Had been sick about one week with vomiting and purging. Was in very poor condition on admission. Cœliotomy was performed the day after admission. An abscess cavity was found in the right iliac fossa. The pus had a distinctly fæcal odor. At the bottom of the abscess the appendix was found. It was gangrenous, and there was a perforation in it. The boy never reacted from the operation and died several hours after it.

VI. M. C. Admitted seventh month, 3d, 1894. Female, white, American, aged 11 years. Eight days previous to admission this little girl received a blow on the abdomen in falling from a swing. Had had intense pain in the right iliac fossa, and her bowels had not moved since the accident. Cœliotomy was performed immediately after admission. Incision made in right iliac fossa. On opening the peritoneum a large gush of pus occurred. The appendix was not found. A fæcal fistula formed in the site of the wound but closed completely before she was discharged from hospital.

VII. J. H. P. Admitted seventh month, 7th, 1894. Male, white American, aged 28 years, shoemaker. No history of a previous attack. Six days previous to admission he was kicked in the right side of the abdomen. Since then had been constipated and had much pain in the region where he was kicked. Cœliotomy was performed immediately after admission. Incision made in right iliac fossa. As soon as the peritoneum was open there was a rush of very foul smelling pus. The appendix was found at the bottom of the abscess cavity. It was gangrenous, contained an enterolith, and was perforated in two places. The appendix was four and one-half inches long. Recovery.

VIII. C. J. C. Admitted seventh month, 17th, 1894. Male, white, American, age 39 years; foreman. No history of a previous attack. Ten days previous to admission he had eaten a large quantity of chestnuts. Since then had suffered from intense pain in right side of abdomen. Cœliotomy was performed immediately after admission. Incision made in right iliac fossa. On opening the peritoneum a large quantity of foul pus welled up. Appendix was found in the abscess. It was gangrenous, but there was no perforation. Died nine days after operation from exhaustion.

IX. W. L. Admitted ninth month, 9th, 1894. Male, white, Irish, age 34 years. Three years ago had an attack of appendicitis. For three weeks prior to coming to hospital he had suffered from

diarrhœa, with pain in right iliac region. No discoverable cause for his illness. A distinct mass could be felt in the region of the appendix. Treatment, calomel, in fractional doses, with the application of belladonna and mercury ointment under flaxseed poultices to right iliac region. Recovery.

X. C. S. Admitted twelfth month, 12th, 1894. Male, white, American, age 22 years, lineman. No history of a previous attack, although for two years he had suffered from vague attacks of pain in the right iliac region. Present illness began four days before admission, when he had an attack of vomiting just after a heavy meal. Cœliotomy was performed the day after admission. Incision made in right iliac fossa. A large abscess filled with very foul pus was found. The appendix was gangrenous and contained five perforations. It was removed. Recovery.

XI. I. Z. Admitted twelfth month, 15th, 1894. Female, white, Russian, aged 21 years. No history of a previous attack. Had been sick one week before coming to hospital. Cœliotomy was performed the day after admission. Incision made in right iliac fossa. An abscess cavity full of very foul pus was opened, and in it was found the appendix which was much inflamed and had one perforation. Recovery.

XII. J. C. Admitted twelfth month 30th, 1894. Male, white, English, aged 32 years; cook. No history of a previous attack. Had been constipated for one week prior to admission, and, during this period, had taken much purgative medicine. Had persistent vomiting and hiccough for two days previous to admission. Cœliotomy was performed a few hours after admission. Incision made in right iliac region. When the abdominal cavity was opened there was a gush of foul pus. There was a large abscess to outer side and behind the ascending colon, extending nearly up to the liver, and containing in its centre the appendix, which had sloughed at its extremity so as to have a free opening. There was another abscess cavity filled with excessively foul pus just below the cæcum, and extending down into the pelvis. The appendix was removed. Patient died the following day from exhaustion.

XIII. P. T. Admitted first month, 9th, 1895. Male, white, Irish, age 41 years. During the last three years has suffered every few months from attacks similar to the present. There was a distinct mass in the region of the appendix. Declined operation and insisted on leaving hospital. Unimproved.

XIV. M. M. Admitted second month, 21st, 1895. Female, white, American, age 24 years; domestic. No history of previous attack. Present illness began one week before admission. Cœliotomy was performed one week after admission. Incision made in right iliac region. The appendix was found in the centre of a large abscess. It was gangrenous, and was removed. The right Fallopian tube contained pus and was also removed. Recovery.

XV. A. R. L. Admitted second month, 26th, 1895. Male, white, American, age 38 years; laborer. Has had two attacks of appendicitis before. Illness began the day of admission with severe abdominal cramps. Cœliotomy was performed the day after admission. An abscess cavity filled with very foul pus was found in the region of the appendix, but the appendix itself could not be found. Died three days after operation from exhaustion.

XVI. O. L. Admitted third month, 15th, 1895. Male, white, American, age 26 years. Has had a number of attacks of appendicitis. Came to hospital while in good health. Cœliotomy performed the day following admission. Appendix was found somewhat thickened and indurated. No scars and no enteroliths were found in it. Recovery.

XVII. D. S. Admitted third month, 26th, 1895. Male, white, Russian, age 46 years. Has had several attacks of appendicitis before. He had been sick four days before coming to hospital with constipation, pain in abdomen, and vomiting. Cœliotomy was performed a few hours after admission. Incision made in right iliac region. All the tissues about the appendix were bound down tightly by old adhesions. There was a large amount of reddish serous fluid in the abdominal cavity in the immediate neighborhood of the appendix, and also much inflammatory lymph. The appendix was two and one-half inches in length, twisted, walls much thickened and covered with inflammatory lymph. It was closely adherent to

the tissues surrounding it, very red, and appeared to have been the seat of much previous inflammation. The appendix was removed. Died fourteen days after operation from exhaustion.—*Annual Report, Pennsylvania Hospital, 1895.*

SOCIETY REPORTS.

OBSTETRICAL SOCIETY OF CINCINNATI.

Dr. S. C. Ayres read a paper on

THE RELATION OF UTERINE DISEASES TO FUNCTIONAL AND ORGANIC OCULAR DISEASES.

(See page 170.)

DISCUSSION.

Dr. A. W. Johnstone: First and foremost I owe a pardon to the guests for not being here to hear these papers. But I cannot let this beautiful paper of Dr. Ayres pass without discussing it, because it is in the field of my first love. I was an occulist, as you know, for ten years.

This is really a beautiful paper, and, if some one will not ring the chestnut bell on me, I think the cases he has mentioned illustrate, even better than my own, the Stevenson wave. The epistaxis, the hemorrhages into the retina, nerve, chorid, and all are part and parcel of the same which occur in other forms of vicarious menstruation. I believe this may be produced in the same way. The other class of choroidal and retinal inflammation I think very largely due to what he says. I saw two or three of these cases years and years ago. I remember one poor woman especially, before I had anything to do with gynecology, that came to me with a decided choroido-retinitis. I would see her at intervals of about eighteen months. She would come and get some iodide of potassium and then disappear. At each interval she would have a baby, and each time was freshly attacked. At length there was complete blindness. I think that was due to nothing but a Bright's retinitis, which became better during the intervals between the pregnancies. I suppose the connection between Bright's retinitis and the kidney is largely due to the to the developement of the mesoblast. They are formed from the same structures, and anything likely to affect one is likely to affect the other. Histologically and biologically, the retina and choroid are very close in the beginning, and anything that will affect one will likely affect the other. I saw one other case, in which there was limitation of vision to a very small area in both eyes, undoubtedly hysterical, and a very slight lesion was found in the eye to account for it. After curetting, curing up an old chronic endometritis, the eyes seemed to improve, but finally the ovaries had to be removed. I have not seen her for about six months, but she says the eyes are better. The artificial menopause is now about complete, having been forced upon her at about forty-two or forty-three years of age.

Now, as to that class the doctor referred to, in which errors of refraction give so much trouble to young menstruating girls and in which the eyes tire the whole body, the general practitioners and those of us in the other specialties do not recognize the amount of work done by the ciliary muscle. It is doing a hundred times the work of any other muscle in the body. When the whole muscle system is run down in a patient that is neurasthenic, is it any wonder that she cannot use this muscle? And is it any wonder she has a little error of refraction? When one part of the globe is curved more than the other, and with a little exertion she can overcome it, is it any wonder it shows when she becomes run down? That seems to me to be the explanation of these cases in many instances. That is the reason why these errors of refraction give them so much trouble. I think the caution the essayist gave, not to let the patients read

too soon during the lying-in or puerperal stage, is a splendid one. I never, after a surgical operation of any sort, allow them to read for two weeks. It takes about ten days for the wound to heal and for the little disturbances of digestion, etc., to disappear, and then it takes two or three days for the system to regain its tone. It has been with me almost a routine plan, and now I understand why it is best to do so.

I can only close discussing the doctor's paper by thanking him for, I think, one of the best and most interesting papers we have had here for a long time. It is, I suppose, most interesting and entertaining to me because it embraces the two subjects I have paid the most attention to.

I wanted to hear Dr. Eichberg's paper very much, because it encroaches so closely upon neurasthenia, and it comes very closely into one of our essential methods of practice in treatment. I wanted very much to hear what he had to say about it. I believe the "rest cure" is the grandest humbug which has been practiced. The very reason I have been away so much this evening is due to one of those cases, which has been placed through the "rest cure" four times. She has a cervix about as big as the tip of my finger; she has a uterus which I am sure does not measure over two inches. She did not begin menstruating until she was sixteen years of age. In other words, it is the most perfect typical case of infantile uterus I have ever seen. She has now a pair of diseased ovaries, and here the men have been putting her through the "rest cure." That has been my experience all the way through. Whenever I make a diagnosis of neurasthenia I am inclined to think it is a mistake, and I had better go over it again, except where there is some great mental strain. Even before this mental strain comes, I grant you it may be a case, but no amount of "rest" treatment will do the patient any good. But get a massage nurse and send the patient to California, Japan, China or somewhere where she will have a change of life and it will do her good. This thing of putting the patient to bed may do our pocket-books good, but I have given it up because it does the patient no practical good. I have never yet made a diagnosis of one of these neurasthenics, who has dragged along for years with nothing to account for it, in which I have gone back and hunted carefully and not found a pathological lesion which has been overlooked. The Weir-Mitchell theory is beautiful on paper, but in practice it does not exist, except in the way I have told you. Every time there is a leak there is some pathological lesion through which it occurs, and you will never cure it until the pathological condition is corrected. After this is done, all these patients need is a bright, happy life, and they become well.

Dr. Palmer: Pardon me for speaking again, but this is another very instructive and interesting paper. Unquestionably, to my mind, there is an association between these two organs, the eye and the uterus or ovaries. Ocular diseases produce uterine disorders, and *vice versa*. Eye-strain is a very common cause of headache, as everybody knows, and it does more than induce or produce headache; it causes other nervous symptoms and neuralgia, it induces palpitation of the heart, insomnia and stomach disorders, and I do not see why it could not also induce certain pelvic disorders. It seems to me that we see, as it were, a direct association between the eye and the uterus, and we must recognize that certain ocular symptoms come from disease of the uterus and ovaries, and *vice versa*. We must not be misled by the fact that a good many of these diseases are associated by a general disorder of the blood and nervous system. And may not both diseases be the result of the general disorder? I believe many of these diseases are coincident, and both dependent upon the general condition.

Reference has been made to the form of eye disturbance which comes from albuminuria. Dr. Ayres referred to the importance of examining the urine of pregnant women before labor. I think no intelligent practitioner now neglects this. I always do it, and it is done in our hospital daily for weeks before parturition. We look for all changes in quality and quantity. We determine whether to allow pregnancy to go to term, or bring on premature delivery by the condition of the urine and the resulting symptoms. The eye symptoms during lactation, it seems to me only illustrate that they, too, are the result of the general condition. Lactation changes the quantity of the blood, alters its quality, and this general disturbance resulting brings about the eye disorder.

DR. LOUIS STRICKER: As I look at it this evening, I am rather skeptical about uterine reflexes of the eye. It seems that they might be divided into those which come on during the menstrual period and those which the doctor has classified as as coming along with metritis, endometritis, and ulceration of the cervix and things of that kind, and finally the classification of cases which come on as the result of Bright's disease. Of the first class it seems rather far-fetched to connect the two together, unless there is a vasomotor disturbance, and this in years worked a change in the choroid and finally one of the vessels would give. Now, I have seen one case of that kind, a young lady who had her menstruation suppressed suddenly while at the fair in Chicago, and the next day she had a hemorrhage. She was perfectly healthy otherwise, and it is impossible for me to declare why the hemorrhage occurred, unless there is some connection that way. I agree with Dr. Palmer, that the diseases are usually associated more than anything else. The constitutionality of the blood is changed and the eye is affected that way, especially the asthenopic symptoms are produced. The ciliary muscle is affected, and is no longer able to do the work it has to do. Especially is this the truth when the patient becomes older and they are not able to accommodate so well. When it comes to the cases which follow Bright's disease, it hardly seems to me proper to class those with the uterine diseases at all, for this is a disease of the kidney; although it may be induced by pregnancy, it remains, nevertheless, a disease of the kidney, which I do not think ought to be classed with the uterine diseases. Then the large class of hemorrhages, it seems to me, have nothing to to do with the eye, but simply to anemia of the brain. The same thing follows in hemorrhages after operation and where hemorrhage follows an ulcer in the stomach. I saw cases in the hospitals of Europe where blindness followed ulcer of the stomach.

Copper Arsenite in Therapy.

A number of cases are described by Dr. A. Hedlicka in which he employed copper arsenite locally, with almost universal success in the various acute and sub-acute inflammations of the mucous membranes, attended with pain, suffusion and more or less watery discharge. He found it most efficient in solutions of 1:50,000—100,000. These solutions are easily made by dissolving a $\frac{1}{100}$ grain pellet in $1\frac{1}{2}$ ounces of water; they are applied at intervals rarely longer than an hour (bladder, uretha and nose), and frequently not longer than from ten to fifteen minutes.

The remedy is rather indifferent in cases where the discharge is thick or persistent unless the affected surface be previously thoroughly cleansed.

The duration of the treatment ranged from a few hours to two or three days in mild cases, from several days to three months in severe cases. The author pretends to have never failed; relief being always instantaneous, no other nearly remedies were needed.—*N. Y. Med. Jour.*

The Treatment of Hemorrhoids.

Dr. Claude A. Dundore has an interesting article on the treatment of hemorrhoids in *Mathew's Quarterly* in which he presents the following conclusions, based upon a large correspondence with American surgeons:

1. The legature is the safest method, as there is less likelihood of its use being followed by hemorrhage, strictures, or ulcers.

2. The clamp and cautery causes less pain and a shorter convalescence, but hemorrhage and stricture of the rectum may very often follow its improper application.

3. Whitehead's method should be limited to those cases in which the entire circumference of the anus is involved. In ordinary cases of one or more hemorrhoids it should never be used.

4. Simple dilatation of the sphincter, injection of carbolic acid and Manley's method are merely palliatives.

Ipecac not an Oxytocic.

Dr. A. Keilmann (*Petersburger Medicinische Wochenschrift*, No. 24, 1894) has tried the tincture of ipecac as an oxytocic in weak uterine contractions as recently recommended by Drapes and Utt of St. Petersburgh and denies that it has any such powers. He would rather advise pushing the head from above down into the pelvis, but under anesthesia.

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A.M., M.D.

MEDICINE

Ichthyol in Miscellaneous Cases.

P. Schmitz, (*Amer. M. & S. Bul.*) Ichthyol appears on the market in a number of salts of sulphoichthyolic acid, known, according to their respective basei, as Ichthyol-Ammonia, Ichehyol-Zinc, Ichthyol-Sodium, etc. The form principally employed is the Ammonium Sulpho-Ichthoolate or Ichthyol-Ammonium.

In eczema. urticaria, psoriasis, seborrhea, intertrigo, and pruritus the writer found ichthyol to be a very efficient remedy. For these cases he uses it in different combinations and proportions, tncorporated with salicylic acid, zinc oxide, powdered starch, and vaseline, or with the zinc-oxide ointment. The following combination is a favorite:

Ichythol	½—1 dr.
Acid Salicylic	20 grn.
Zfnc Gxide	2 dr.
Powd Starch	4 dr.
Vaselin	1 oz.

Apply twice daily.

In chronic eczema, where the affected surface was quite large, with severe itching and hyperemia, the following combination,

Ichthyol	2 dr.
Distilled Water	4 dr.
Lavoline	To make 4 dr.

Apply two or three times daily,

relieved the itching almost immediately, and the hpyeremia subsided in a short time.

In skin diseases of children, add only from 20 min. to ½ dram of ichthyol to the ounce of ointment. In contusions and small wounds apply it either in full strength, or mixed in equal parts with glycerin. He has never observed any untoward effects.

In pruritus ani 1 dram of ichthyol to the ounce of vaselin gives quick relief.

He found the drug to be a good analgesic, anodyne, antirheumatic, antiseptic, and wound granulator, appetizer, and gastric tonic.

The first case was that of a woman during lactation, with inflammation of the left breast. She was suffering excruciating pains in the mamma and head for three to four days, and the gland was swollen and very red. He prescribed a mixture of equal parts of ichthyol and water, and ordered this to be gently rubbed in two or three times daily; the breast then to be covered with cotton and flannel. This constituted the whole treatment. The patient suffered very little after the applications, and in two days the breast opened, discharging considerable pus. The applications were continued, and in a short time she recovered perfectly.

In another case of mastitis, where inflammation had begun two days previous to his being called, he pursued a similar treatment. The inflammation terminated in resolution, and in three days the patient was well.

He tried it in one case to check the secretion of milk, and with good results, after applications of belladonna and camphorated oil had failed. This was a case of still-birth at full term.

In a case of severe lumbago, he ordered an inunction with ichthyol, dram 1½, ether and alcohol, equal parts, to one ounce. This to be rubbed in well, three or four times daily, and the parts covered with cotton. The patient had used only half of the liniment, when the backache left him.

He treated many similar cases this way without a single failure. In pleurodynia, intercostal neuralgia, and sciatica, he uses the same liniment, and gives internally two to three pills, two to three times daily, with good results.

In rusty-nail wounds he makes an application of pure carbolic acid, after which the following ointment is applied twice daily:

Ichthyol	½ dr
Iodoform	15 grn.
Vaselin	To ½ oz.

In fresh wounds apply pure ichthyol, which relieves the pain quickly; after that the above ointment is used. In abscesses, after lancing, the same ointment is applied, until healing is completed. In contusions and sprains, use either the liniment (ichthyol in alcohol and ether) or equal parts of ichthyol and glycerin. It relieves pain and reduces the swelling quickly.

On Nov. 19, 1892, was called to Mrs. E., about 53 years of age, having a large, bad-looking ulcer at the junction of lower and middle third of the right leg, extending from the front to outer side. The ulcer measured two inches and a half in diameter, was fully one-quarter inch in depth, and had a somewhat grayish look. The leg, nearly up to the knee, was very red; there was considerable swelling of leg and foot, with pain. She had injured her leg by a fall, about a year previous, and had tried to heal it with household—and patent—remedies. He made a thorough application of ichthyol over the ulcer and swelling, covered ulcer with gauze. wrapped the leg and foot in a thin layer of cotton, and applied a bandage. The same application and dressing were repeated once a day until Nov. 25. The redness had disappeared by the 22d, the ulcer looked clean and was covered with healthy granulations. On the 23d, swelling entirely gone, no pain, and wound was doing as well as possible. After the 25th the wound was dressed every second day with iodoform gauze, cotton, and bandage until December 5; then every third day until Dec. 20. and again on the 26th. By Dec. 31 the ulcer was perfectly healed. During all this time the woman did not rest a single

day, but kept on her feet, doing all her housework.

The following is a case of varicose ulcer: Mrs. T., age 28 years, pregnant four months and a half, had a very large varicose ulcer on lower third of right leg, causing her much pain and itching. She had the same trouble during two previous pregnancies, but could not get the ulcer healed until after confinement. Ichthyol, 1 dram; iodoform, 20 grn., and vaselin to ½ oz., applied morning and evening, did fairly well. Iodoform alone caused her considerable pain. Ichthyol, 45 min.; salicylic acid, 10 grn.; belladonna ointment, 1 dr.; and vaselin, 1 oz., was applied once daily, covering with gauze, cotton, and bandage. In five weeks from the beginning of the treatment the leg was well, without having the patient confined to bed. Subsequently she wore a rubber bandage, and up to this time there has been no return of the trouble.

In a severe case of acute articular rheumatism of the lower extremities he was successful with ichthyol. There was considerable swelling of the feet, about the ankles and knees, severe pain and inability to move the joints; temperature 102, pulse 94. Patient had severe headache and appetite was poor. Calomel and sod. bicarbonate, 2 grn. of each, moved the bowels. After that one ichthyol pill, four times daily, and 5 grn. acetanilid every three to four hours, to relieve the headache and keep down the temperature. Alcohol-ether and ichthyol liniment (2 dr. to 1 oz.) was rubbed in twice daily, and parts covered with cotton. After three days the temperature was about normal, swelling was gone, pain and headache had subsided, and appetite fairly returned; patient could move the affected joints again without the least pain. He then put him on salol, 15 grn., four times daily. The next day temperature and pulse normal, and the patient was feeling quite comfortable. Then he reduced the salol to 10 grn., three to four times daily, for about three days. Two days afterward, i.e., six days after the beginning of the attack, patient was outdoors, and after a few days he went to work and discontinued taking medicine.

Ichthyol is a very valuable medicine in a wide range of morbid conditions, if fairly tried. From his own experience, ichthyol seems to prove efficacious in all diseases dependent upon hypermia and capillary dilatation. It has been tried unsuccessfully here and there in certain affections dependent upon atrophic conditions.

SURGERY.

Castration for Enlarged Prostate.

Haulds, (*Brit. Med. Jour.*) reports seven cases in which this operation was performed. In the first hemiplegia occurred, with death, four weeks after the operation. The second developed signs of acute mania six days after the operation, and died ten days after. The third, also developed mania, and died on the twelfth day. The fourth exhibited the same symptoms, with the same result—death. The fifth had no appreciable mitigation of the urinary trouble thirty days later. The sixth was one of single orchectomy, but the patient died in a few days in a state of mental abberation. The seventh, also a single orchectomy, developed distinct mental weakness, and death followed.

The Results of Double Castration in Hypertrophy of the Prostate.

J. Wm. White, (*Ann. of Surg.*) reviews the theoretical, clinical, and experimental work on this subject up to the present time. His conclusions are as follows:

1. The function of the testis, like that of the ovary, is twofold: reproduction of species, and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testis and ovary in this respect does not disappear coincidentally, and that hypertrophies with closely allied organs, like the prostate and uterus, are the result of this misapplied energy. This hypothesis would increase the analogy between the fibre-myomata of the uterus and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

2. The theoretical objections against the operation of double castration have been thoroughly negatived by clinical experience, which shows that in a very large proportion of cases (that is, very approximately, 87.2 per cent.) atrophy of the prostatic enlargement followed the operation; and that there is disappearance by great lessening in degree of long standing cystitis (52 per cent.); more or less return of vesical contractibility (66 per cent.); amelioration of the most troublesome symptoms (83 per cent.); and a return to local conditions not very far removed from normal (46.4 per cent.), may be expected in a considerable number of cases.

3. The deaths have been 20 in 111 cases, a percentage of 18, but of these there seem to be 13 that may fairly be excluded in an attempt to ascertain the legitimate mortality. In patients operated upon under surgically favorable conditions; i. e., before the actual onset of uremia, or before the kidneys have become disorganized by the two factors rarely absent in advanced cases, backward pressure and infection. This would leave a mortality of 7.1 per cent., which will probably be decreased as advanced knowledge permits of a better selection of cases. It is important to note that even in the desperate cases which make up this series of deaths, fifteen (75 per cent.) showed improvement of symptoms by shrinkage of the prostate before they died.

4. Comparison with other operative proprocedures seems to justify the statement that, apart from the sentimental objections of aged persons on the one hand, and the entirely natural and very strong repugnance to the operation felt by younger persons, cas-

tration offers a better prospect of permanent return to nearly normal conditions, than does any other method of treatment. The relatively greater degree of improvement in successful cases should be considered as well as the mortalityin comparing the operation with the various forms of prostatotomy and prostatectomy. So, too. should the absence of any risk of permanent fistulae, peritoneal or suprapubic, the ease and quickness with which the operation can be performed, and the possibility of avoiding altogether the use of anesthetics, which in these cases are of themselves dangerous.

5. The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases at least it has resulted in very marked improvement of symptoms. It is worthy of furtherinvestigation.

6. From experiments on dogs it has been shown in nearly every case in which the vas deferens was tied or divided on both sides, that without much change in the testicles there were beginning atrophy, and considerable loss of weight of the prostate. Those experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the inclusion or severance of small, but important, nerves may account for the effect on the prostate.

7. Alteration of the vascular constituents of the cord, or of the whole cord, produces atrophy of the prostate, but, in his own experiments, only after first causing disorganization of the testis.—*Am. M. S. Bul.*

The Treatment of Fractures.

Dr. Beddoe (*Lancet*), after a careful consideration of twenty-nine cases of Pott's fracture and fracture of the shaft of the femur, concludes that the object to strive for in the treatment of fractures is to replace and fix the bone in its original position. This cannot always be done by means of splints. To go on treating fractures by such means in the face of the results of the cases tabulated can be justified only if there was no other method of treatment at our disposal. There is one other method which offers a prospect of perfect cure, and that is to cut down upon the seat of fracture and unite the fragments by screw or wire in the exact relation that they occupied previously. The only possible objection to this will be raised by those who are doubtful of the success of their aseptic precautions. As a result of comparison of the two methods of treatment, the operative method is infinitely superior to the mechanical.

The Treatment of Elbow-Joint Fractures in the Position of Acute Flexion Without Splints.

Smith (*Boston Med. and Surg. Jour.*) from the evidence of experimental fractures, and the results of clinical experience, arrives at the following conclusions in regard to fractures in this situation:

1. All fractures of the lower end of the humerus, once in position, are held in place if the forearm is kept acutely flexed.

2. Such flexiou can be used without danger to the limb or undue distress to the patient.

3. The only force required being one of flexion, no rigid apparatus is needed, it being sufficient to strap the forearm to the arm. One of the strong points of this treatment, therefore, is its perfect simplicity.

4. The points to emphasize are: Be sure to replace fragments as flexion is made, taking great care that the internal condyle is as low as possible and the joint not widened by effusion between fragments. If the condyle is kept down no gun-stock deformity can occur.

5. In the cases thus far treated the amount of motion gained has been slightly greater than after ordinary methods. The amount of deformity has been very much less.

Fractures in or Near Joints.

Park Atlantic Med. Weekly says that within the first few days following a fracture into the joint the following conditions may be present:

(1). Too wide separation of the fragments by hemorrhage or effusion, this occuring at the joint end as it would at no other point, and being obviated only by the aspirator, or possibly by aseptic incision.

(2). Complete or partial rotary displacement in some other direction, by which bone surfaces are no longer opposed.

(3). Interposition of fibers, or of soft tissues, between bone surfaces, by which bony union is prevented.

(4). The absolute intra-articular character of certain fractures, where fragments are broken off which have little or no blood supply remaining, and which must remain inert foreign bodies, or possibly as irritants, and do much harm.

(5). Exuberance of callus.

(6). Absence of callus, which often does not appear when bone ends are saturated in joint fluid.

Some of the more remote consequences are:

(1). Exuberant callus forming later as the result of too early attempts to move the parts, as a consequence of delayed callus formation, or from other causes.

(2). Separation of fragments.

(3). Fibrinous effusion, especially when it consists merely of blood.

(4). Adhesion of tendons.

(5). Displacement of bone ends by fragments, and vicious union.

(6). Exostosis and osteophytic outgrowth.

(7). Absorption of bone.

(8). Involvement of nerves by pressure of callus.

(9). Thrombosis of veins, which may lead to obliteration of the deeper vessels, and more or less enlargement of the superficial veins.

(10) Edema, which may result from the above condition, or from simple pressure without preceding thrombosis.

(11). Chronic hydrarthrosis, which sometimes almost defies all attempts to subdue it.
(12). Arthritis deformans traumatica, which has been described by various authors, and is the occasional, though remote, result of fracture.
(13). Necrosis.
(14). Malignant disease.
This is by no means a complete list.

The pathological features involved in these cases are the following: The callus is not thrown out with the freedom nor in the same way that we see it in fractures of the shaf of long bones partly owing to the absences of periosteum on the articular surfaces, and partly to both bone surfaces being more or less bathed in synovial fluid; even when bony union occurs within the joint, the line may not be covered by cartilage and is often marked, but a grooved fibrous tissue may replace the ligating cartilage, but cartilage itself does not form to compensate for defects of this kind.

The causes of complete failure of bony union following these fractures are probably: Most often and first, separation and mobility of fragments; next, the influence of synovia; then, insufficient blood supply; and, finally, lack of external or ensheathing callus, which holds together and steadies the fragments. Loosened intra-articular fragments may be partially or completely absorbed.

In treating these cases more harm comes from too early efforts at positive motion than from too late. The first care in dealing with fractures implicating the joints is to give the most absolutely best fixation, with the most correct possible approximation of fragments, to which ideal results everything else is subordinate; and it is therefore a mistake to move these parts before such fixation has occurred. Plaster-of-Paris gives the most comfortable, serviceable, and accurately fitting splint that can be employed in fractures of the upper extremity, and the open or little splint is preferred by the author. The advantage of this kind of splint is that it is made for the particular individual, and no other; it fits him like a skin-tight garment, and in which, provided only the first requisite—that is, accurate reduction—has been provided for, the limb may rest for as long a time as is required.—*Am. M. S. Bul.*

Restoration of Joint Function After Fracture.

Roberts (*Phila. Polyclinic*) says: Early passive motion adds to the traumatism in fractures involving joints, and may thereby increase the formation of intra-articular fibrous adhesions. In aseptic cases it is unnecessary; in cases in which readjustment of the fragments is imperfect, it does no good; in septic cases, it increases irritation and does harm. It should, therefore, not often be employed.

Late passive motion is desirable to hasten the return of functional usefulness in joints stiffened by muscular rigidity after the fracture apparatus has been removed. It is also serviceable to break up intra-articular fibrous adhesions due to synovitis or arthritis resulting from fractures.

Massage, soaking in hot water, frictions with liniments, electricity, passive motion, and attempts at voluntary movement continued for months will often cause great improvement in the functional usefulness of joints supposed to be irretrievably damaged.

GYNECOLOGY.

Ovariotomy, Eighty-eight Quarts of Fluid: Recovery.

Reifsnyder (*Amer. Journ. of Obstet.*), describes two cases of ovariotomy performed on native Chinese women in the Margaret Williamson Hospital, Shanghai; both patents recovered. In the first case the patient was 23; the tumor weighed 80 lbs. The second patient was 25 years of age; she married at 19, and soon afterwards her abdomen began to enlarge. She had never been tapped. She was 4 feet 8 inches in height, and the circumference at the umbilicus was 5 feet 7¾ inches. She passed about 16 oz. of urine in twenty-four hours, free from albumen; its specific gravity was 1026. Her appetite was good, and the bowels acted once or twice daily. She had been unkindly treated as a sterile woman unfit for domestic work. After numerous precautions, ovariotomy was performed. Chloroform was given; her head and shoulders had to be somewhat elevated; she took but little of the anæsthetic. Eighty-eight quarts of fluid were removed; the tumor consisted of one large and one very small cyst; there were free adhesions superiorly. The empty tumor weighed 6½ lbs. There was no ascitic fluid in the abdominal cavity. The pedicle was long and about 2½ inches broad. The abdomen was washed out, then the wound closed with twelve silk sutures. There was much shock at first. After the first day, she passed urine voluntarily, and her bowels were moved forty-one hours after operation. On the second day, there was flatulent distension, the pulse rising to 102°. Rochelle salts were given. Her second night was the worst; she had two hypodermic injections of digitalin ($\frac{1}{100}$ grain), brandy by the mouth twice, one turpentine enema, and a capsule of turpentine taken by the mouth. Afterwards she did well. Her weight, two months after the operation, was 92 lbs.

OBSTETRICS.

Uncontrollable Vomiting of Pregnancy.

Purch (*Med. Mod.*) recently introduced a discussion on this question before the Societe Obstetricale de France. His patient, a hysteroneurasthenic subject, suffered very early, so he emptied the uterus, by the curette, at the sixth week, without loss of blood. The vomiting at once ceased. Circumstances contraindicted palliatives in this case. Gaulard believed that palliatives should be tried until there was a rise of temperature, which was a dangerous symptom. Charpentier stated

that he is now in favor of terminating the pregnancy as early as possible. During the first three months it is easy to get all the ovum away. He now introduces into the uterus a short stick of solid nitrate of silver, which is left to melt there. But in one case where a practitioner, fearing to use so strong a caustic, introduced a pledget of cotton soaked in 20 per cent. solution of nitrate of silver, the result was prompt and satisfactory. Disproportion between pulse and temperature is a grave symptom. Marduel related a serious case The patient had an insane blood relation. Bad vomiting set in during her pregnancy. Opium was given, and she then could keep a little food down, but symptoms of abortion appeared, the drug having probably killed the fœtus. Partial blindness set in. A laminaria tent was introduced; next day Fochier emptied the uterus under ether. This proceeding proved very difficult, the uterine walls and even the abdominal parties being bruised. The sickness ceased, but returned on the next day. A trace of albumen was detected in the urine. For a week the patient grew worse, becoming quite blind from retinal hæmorrhage and œdema around the disc due to cerebral mischief. A blister was applied to the nape. The sight was partly restored, and a few days later the vomiting ceased. Marduel's services were dispensed with too early; he was recalled, and found the patient delirious. She died on the same day, nearly a month after the induced abortion. Fochier, in reference to the difficulty of emptying the uterus when he operated in Marduel's case, observed that ether is a good anæsthetic for such work. The uterus must be well depressed when the finger is used to empty the uterus, as the placenta is very adherent in these cases.—*Brit. Med. Jour.*

The Fillet in Breech Labors.

Bar (*Arch. de Tocol. et de Gynec.*) exhibited at the February meeting of the Paris Obstetrical and Gynæcological Society, an infant, aged 2, with a deep scar on the right groin. It limped slightly, and the right thigh was four-fifths of an inch short. The mother at its birth was a primipara, aged 39; the child was then very bulky, and the fillet was used, as all other means to deliver the child, especially the forceps, had failed. Bar attributed the shortening to atrophy of the head of the femur following separation of the epiphysis due to the fillet. He exhibited a similar case where he had used the fillet. A deep incised wound lay in the left groin. A crack was heard during the extraction. The wound suppurated, and the child died of pneumonia. Charpentier admitted that he had damaged both soft parts and bones even when employing the fillet with the greatest care. Gueniot always aided the traction of the instrument by passing the hollow of the hand into the concavity of the sacrum, and exercising further traction. This provoked uterine efforts. Budin added uterine expression as an aid to the fillet. Porak believed in the application of two fillets, one on each thigh. Maygrier held that the fillet should be used in dorso-anterior, and the forceps in dorso-posterior, positions. By that principle fractures are avoided. Olivier protected the fillet by enveloping it in a rubber tube. In that way he had always avoided accidents.—*Brit. Med. Jour.*

Birth of a Child without Rupture of Membranes.

Dr W. M. Morison reports a case in the *British Med. Jour.*):

The patient was suffering from acute phthisis, with a temperature of about 101°. Two days before parturition she complained of severe diarrhœa, which was, however, quickly and easily controlled. Some time before she miscarried at the fifth month, and a day or two prior to it she had a similar attack of diarrhœa which was but the precursor of a second miscarriage. She was in her seventh of month pregnancy. Her surmise was perfectly correct, as in two days after she complained of some pains in the lower part of the abdomen. I was sent for, and on arriving there found a cyst like mass protruding from the vagina. The labor was absolutely dry, not a trace of blood was to be seen, and the uterus contracted without any trouble. The recovery from the immediate effects was highly satisfactory, considering the advanced stage of phthisis in which the patient was. The membranes enclosing the fœtus were quite intact, and contained practically no amniotic fluid. The cord was pulseless, and no indication of life in the fœtus, which was otherwise a well developed seven months' growth. The placenta was normally attached, and the presentation was a breech. Children born with a "caul," as a condition such as this is called, are, when the child survives, a source of great satisfaction to the parents, especially parents of a superstitious bias, and such are very numerous yet, because of a supposed "luck" which smiles upon the path through life of those who make their entrance into this weary world shrouded in the mysterious garb of the mysterious world from which they come. In premature births is it not a fact that breech presentations are as numerous, or at any rate a more frequent occurrence than at full time?